

# **State of Missouri Treatment Needs Assessment Project**



## **Substance Use and Need for Treatment Among the Household Population in Missouri: 2001/2002**

**September 2003**

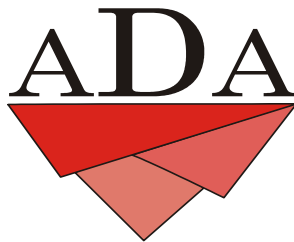
# **State of Missouri**

State Treatment Needs Assessment Project

## **Substance Use and Need for Treatment Among the Missouri Household Population: 2001/2002**

### **FINAL REPORT**

Prepared in Collaboration with



**Missouri Department of Mental Health**  
Division of Alcohol and Drug Abuse

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**September 2003**

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## ***Executive Summary***

This report presents findings from a study designed to examine substance use and the need for alcohol and other drug treatment and treatment or intervention among Missouri's household population: both adolescent (aged 12 to 17) and adult (aged 18 and older). It provides estimates for (a) the prevalence and correlates of alcohol and illicit drug use; (b) the need for treatment and treatment or intervention for alcohol or illicit drug abuse; (c) the co-occurrence of substance abuse and other problems; and (d) special topics, including cigarette use, substance use among women of childbearing age, and gambling-related problems among Missouri adults. Funding was provided by the Center for Substance Abuse Treatment (CSAT). RTI International of North Carolina collaborated with the State of Missouri in conducting the study. This investigation is part of Missouri's second family of demand and needs assessment studies for alcohol and other drugs.

From July 30, 2001, to February 22, 2002, a random sample of 4,617 adults and 1,904 adolescents in Missouri completed a telephone survey that used a computer-assisted telephone interviewing (CATI) system. Households were selected by random-digit dialing. Data were weighted to reflect current population counts in the state; weighting ensured that groups that were overrepresented in the sample relative to their representation in the population did not have a disproportionate effect on prevalence estimates. Estimates reported here are believed to be reliable, although some may be conservative. Key findings from the 2001/2002 Missouri telephone survey analyses are noted below.

### **Alcohol and Illicit Drug Use among Adults**

- Nearly two-thirds (64%) of adult household residents in Missouri used alcohol at least once in the 12 months before the survey, and nearly half (47%) used alcohol in the month preceding the 2001/2002 survey.
- About 360,000 adult residents of Missouri households (about 9%) used alcohol heavily in the previous 12 months, and 248,000 adults (about 6%) drank heavily in the month prior to the survey.
- Some of the highest rates of heavy alcohol use in the past year were observed for men, adults between the ages of 18 and 24, and single (i.e., never married) adults.
- Approximately 8% of adults, or about 337,000 persons, used one or more illicit drugs in the 12 months before the survey, with 4% (171,000 adults) reporting past month illicit drug use. Almost all persons reporting illicit drug use reported use of marijuana.
- As was the case with heavy alcohol use, rates of illicit drug use in the past year were higher among men, adults between the ages of 18 and 24, and adults who were widowed, divorced, or separated.

- Approximately 3% of Missouri adults reported both heavy alcohol use and use of at least one illicit drug in the past year, and 2% reported use of more than one drug during the past 12 months.
- Adults 18 to 24 years of age, Hispanics, and males reported higher rates of past year heavy alcohol use and use of at least one illicit drug. Rates of past year polydrug use were highest among the youngest age group and among males.
- About 5% of adults reported the nonmedical use of prescriptions in the past year. Nonmedical use was more common among females; younger adults; adults who were widowed, divorced, or separated; and those in school.

### **Alcohol and Illicit Drug Use among Adolescents**

- About 28% of adolescents used alcohol at least once in the 12 months before the 2001/2002 survey, and more than one in 10 (13%) used alcohol in the month preceding the survey.
- About 3% used alcohol heavily in the previous 12 months, and 1.5% drank heavily in the month prior to the survey. Some of the highest rates of heavy alcohol use in the past year were observed for those between the ages of 15 and 17 (6%).
- Approximately 10% of adolescents used one or more illicit drugs in the 12 months before the survey, with another 5% reporting past month illicit drug use. Almost all illicit drug use involved the use of marijuana.
- As was the case with heavy alcohol use, rates of illicit drug use in the past year were higher among adolescents between the ages of 15 and 17.
- Approximately 18% of males and 15% of females aged 15 to 17 reported past year illicit drug use. Adolescent White males and females reported higher rates of illicit drug use than Black males or females.
- Past year heavy alcohol use and use of at least one illicit drug was reported by almost 2% of Missouri adolescents. Almost 2% of adolescents reported polydrug use in the past year, and less than 1% reported past year heavy alcohol use and polydrug use.
- Two-fifths of Missouri adolescents reported ever being prescribed a prescription drug. About 9% of adolescents reported nonmedical prescription drug use in the lifetime, 8% in the past year, and 5% in the past month. Pain killers were the most frequently reported type of prescription used.

### **Need for Substance Abuse Treatment or Intervention among Adults**

- About 3% of adults were defined as meeting criteria for past year alcohol or illicit drug dependence, and 6% were defined as meeting the criteria for alcohol or illicit drug abuse.



- An estimated 10% of adults in the Missouri household population were in need of substance abuse treatment, and 24% were in need of treatment or intervention.
- Alcohol accounted for much of the need for treatment and treatment or intervention. Of the estimated 10% of adults in need of alcohol or illicit drug treatment, 9.5% specifically needed alcohol treatment, and 2% needed illicit drug treatment. Of the 24% in need of treatment or intervention for alcohol or illicit drugs, 21% specifically needed services for alcohol and 5% needed services for illicit drugs.
- Men were more likely than women to need treatment, and young adults aged 18 to 24 were more likely than adults in other age groups to need treatment.
- Of the estimated 431,000 adults in need of treatment in the past year, only about 6,400 reported actually receiving detoxification, residential treatment, services in a halfway house, or methadone maintenance in the past year.
- Approximately 23,000 Missouri residents self-reported an unmet need for formal or informal treatment services (i.e., wanted more services than received or did not receive services but wanted them). Although most Missouri adults who were identified as needing treatment did not appear to see the need for assistance, the data on demand for services suggest a considerable unmet demand for treatment services.

### **Need for Substance Abuse Treatment or Intervention among Adolescents**

- About 4% of adolescents in the Missouri household population in 2001/2002 were defined as meeting criteria for past year alcohol or illicit drug dependence, and 2% were defined as meeting the criteria for alcohol or drug abuse.
- Overall, about 6% of adolescents were estimated to be in need of substance abuse treatment, and 8% were estimated to be in need of treatment or intervention.
- As was the case for adults, alcohol accounted for much of the need for treatment and treatment or intervention. Of the estimated 6% of adolescents in need of treatment, 5% specifically needed alcohol treatment. Of the 8% in need of treatment or intervention, almost 7% needed it specifically for alcohol.
- Male adolescents were more likely than female adolescents to need treatment and treatment or intervention, and older adolescents aged 15 to 17 were more likely than younger adolescents to need treatment and treatment or intervention services.
- Of the estimated 28,500 adolescents in need of treatment in the past year, only about 100 reported actually receiving detoxification, residential treatment, services in a halfway house, residential treatment, or methadone maintenance in the past year.

## **Substance Use and Need for Treatment among Pregnant Women**

- Among women who were pregnant in the year before the survey, about 11% used illicit drugs, 3% reported heavy drinking, and 31% smoked cigarettes in the past year. In addition, 5% were current heavy smokers.
- Approximately 5% of adult women who were pregnant in the year prior to the survey were identified as needing substance abuse treatment, and nearly one-quarter were estimated to be in need of treatment or intervention. These estimates translated to about 7,700 pregnant women needing substance abuse treatment. Alcohol abuse accounted for nearly all of this need.

## **Tobacco Use**

- More than one-third of adults (or 1,469,000) reported some kind of tobacco use in the past year; the majority of it was cigarette use, which was relatively common among Missouri adults. More than one-quarter, or nearly 1,194,000 adults, smoked cigarettes in the year prior to the 2001/2002 survey. During the past year, 5% (or 208,000) of Missouri adults reported using smokeless or chewing tobacco, and 9% (or 386,000) reported smoking cigars.
- Rates of past year cigarette use were particularly high among adults aged 18 to 24 (45%). Cigarette use was less prevalent among adults with a college education (17%) compared with adults who had less than a high school education (42%).
- Approximately 18% of Missouri adolescents used tobacco products in the past year. An estimated 15% (or 71,000) of Missouri adolescents reported cigarette use in the year prior to the survey, and 8% smoked in the previous month. Less than 1% were heavy smokers. Approximately 4% of adolescents used smokeless or chewing tobacco in the past year, and 7% used cigars.
- Adolescent males were more likely than females, and older adolescents were more likely than younger adolescents, to have smoked in the past year and to smoke heavily. White adolescents were more likely than Black to have smoked in the past year.

## **Perception of Physical and Mental Health**

- Adults who used illicit drugs in the past year were more than three times as likely to perceive fair or poor mental health compared with persons who had never used illicit drugs in their entire lives.
- Adults who reported lifetime illicit drug use were nearly twice as likely as lifetime nonusers to report fair or poor mental health.

- Compared with 25% of the overall adult household population, 34% of adults in need of substance abuse treatment, and 32% in need of treatment or intervention, reported fair or poor mental health.

## **Gambling**

- Less than 1% of adults in the overall household population and about 1% of adults who gambled on more than 5 days in the year prior to the survey were considered probable pathological gamblers, based on the lifetime occurrence of at least three out of eight possible gambling-related problems.
- About 28% of adults who were in need of substance abuse treatment and 37% in need of treatment or intervention were identified as problem gamblers.

# **1. Introduction and Background**

The problems of substance abuse are well known and have been the topic of numerous investigations, including national, state, and local studies (see Rouse, 1995, for a selected summary). Indeed, substance abuse has been called the nation's number-one health problem and has a wide-ranging impact on individuals' health, as well as social, family, and work relationships (Horgan, Marsden, & Larson, 1993). Poor health, disrupted social relations, and inability to maintain employment are just a few of the negative consequences. Every sector of society spends large sums of money to combat these repercussions, and states tend to shoulder the heaviest burden of finding the monies to do so (National Center on Addiction and Substance Abuse at Columbia University, 2001). The good news is that substance abuse is treatable; the benefits of increased government attention and funding for the treatment needs of the population flow not only to the individual but to the community as well (Gerstein et al., 1994; Hubbard et al., 1989). However, attempts to address substance use problems using treatment services require information about the nature, severity, and range of problems among various population subgroups.

*This study was designed to examine the substance use, demand, and need for alcohol and other drug treatment among household residents aged 12 or older in Missouri.*

In an attempt to gather such information, this study examined the substance use, demand, and need for alcohol and other drug treatment among household adolescents aged 12 to 17 and adults aged 18 or older in Missouri. This is the second study conducted by Missouri's Department of Mental Health (DMH), Division of Alcohol and Drug Abuse (ADA), that examines the prevalence of substance use and need for treatment among the state's household population. This study will build upon data collected from adults in 1997. Although the National Household Survey on Drug Abuse (NHSDA), now the National Survey on Drug Use and Health (NSDUH), provides national annual estimates on the prevalence of drug use and model-based estimates for states, these data cannot be used to make annual direct estimates specifically for Missouri. Further, and of great planning importance, these estimates are not made for substate areas. In addition, although state-level data on such behaviors as alcohol consumption and drinking and driving are collected for Missouri as part of the Centers for Disease Control and Prevention's (CDC's) Behavioral Risk Factor Surveillance System (BRFSS), these data do not allow a detailed assessment to be made of treatment needs.

Current data on substance abuse, dependence, and drug treatment histories are needed to indicate the number of household residents and percentage of the Missouri household population that might meet diagnostic criteria for dependence or abuse for alcohol or other drugs, and hence need treatment services. Funding for this study was provided

by the Center for Substance Abuse Treatment (CSAT), and RTI of North Carolina collaborated with the state in conducting the study.

This report provides estimates of (a) the prevalence and correlates of alcohol and illicit drug use, (b) the need and demand for intervention or treatment for alcohol or illicit drug use, and (c) the co-occurrence of substance use and other problems among Missouri's household population aged 12 and older. This investigation is one of a family of demand and needs assessment studies for alcohol and other drugs in Missouri.

## **1.1 Overview of Missouri Demand and Needs Assessment Studies**

*STNAP was designed to assist states in developing data collection and analysis infrastructures for surveillance, planning, budgeting, and policy development.*

In an effort to obtain information on substance use problems and the need for treatment or intervention services among various populations, CSAT made funding available for states to conduct studies of the prevalence of substance abuse in their communities. In 1992, CSAT awarded the first round of 3-year contracts to 13 states as part of the State Treatment Needs Assessment Program (STNAP). Since then, CSAT has issued at least one contract to each of the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands. The STNAP was designed to assist states in developing data collection and analysis infrastructures for surveillance, planning, budgeting, and policy development.

In 1995, the Missouri ADA received funding for its first STNAP. The STNAP consisted of five complementary studies that included both primary data collection and secondary analysis of existing data. The cornerstone of this STNAP was a household telephone survey designed to examine the substance use and need for treatment among the adult household population (Kroutil et al., 1997).

In 1999, the State of Missouri secured funding for a second STNAP. The second STNAP encompasses three studies, including the study of alcohol and other drug household estimates, 2001/2002, for which this report presents findings. The remaining two studies include a survey of jail inmates in Missouri and an integrated study of estimates of substance abuse treatment needs.

Together, the studies from both of Missouri's STNAPs provide an important knowledge base from which to improve efforts to meet its substance abuse and treatment needs, as well as to allocate resources within the state.

## **1.2 Missouri at a Glance**

Missouri covers approximately 68,886 square land miles, making it geographically the 18th largest state in the nation (U.S. Census Bureau,

*Missouri is the 17th most populated state in the nation, with a 2000 total population of 5,595,211 persons.*

2000a). According to the 2000 Census, Missouri has a population of 5,595,211 and is the 17th most populated state. Missouri's population increased 9% between 1990 and 2000. Approximately 26% of the population in 2000 was aged 17 or younger, 60% was aged 18 to 64, and 14% was aged 65 or older (U.S. Census Bureau, 2000a). The median age in Missouri in 2000 was 36 years (U.S. Census Bureau, 2000b). Population estimates for July 2001 indicated less than a 1% increase in the population in less than a year or since April 2000, resulting in approximately 5,637,309 persons residing in the state at that time (U.S. Census Bureau, 2003).

*Missouri's population is primarily White (85%) with a small percentage of the population being Black (11%) or another race (4%).*

Missouri has 114 counties plus the city of St. Louis, for which data are collected separately. Missouri in 2000 had an average population density of 81 residents per square mile (U.S. Census Bureau, 2000a). Many of the most populated areas in the state surround Missouri's major metropolitan areas of St. Louis City and Kansas City. The counties with a population of 100,000 or more include St. Louis County, Jackson County, St. Charles County, Greene County, Clay County, Boone County, and Jasper County (U.S. Census Bureau, 2000b).

Racially and ethnically, Missouri's population is not very diverse. In 2000, Whites made up 85%, Blacks made up 11%, and Asians constituted 1% of the state's population. A small percentage was American Indian or Alaska Native (0.4%), Native Hawaiian or Other Pacific Islander (0.1%), "some other race" (0.8%), or two or more races (1.5%). Hispanics or Latinos constituted 2% of the population (U.S. Census Bureau, 2000a).

*The 1999 Missouri poverty rate of 11.7% was comparable to the 1999 national rate of 12.4%.*

In 1999, 11.7% of Missouri residents lived below the poverty level. The poverty rate in Missouri in 1999 was comparable to the national rate of 12.4% (U.S. Census Bureau, 2000a). Missouri's per capita income rose by 5.1% from \$25,877 in 1999 to \$27,206 in 2000 (Missouri Department of Economic Development, 2001). The average annual wage in Missouri in 2001 was \$32,422 and the average weekly wage was \$623 (U.S. Department of Labor, 2002).

The unemployment rate in Missouri declined steadily from 1993 to 2000, from a rate of 6.5% to 3.4%. However, given the recent economic decline across the country, the Missouri unemployment rate increased slightly in 2001 to 4.7% and to 5.5% in 2002 (Missouri Department of Economic Development, 2003). However, Missouri's unemployment rate continues to be lower than the national average of 5.7% as of October 2002 (U.S. Department of Labor, 2002).

Missouri is located in the geographic heart of the nation. Known as the "Show Me State," Missouri is bordered on the north by Iowa; on the west by Nebraska, Kansas, and Oklahoma; on the south by Arkansas; and on the east by the Mississippi River, which separates it from Tennessee, Kentucky, and Illinois (Microsoft Encarta, 2003).

Missouri's commerce, industry, and tourism are quite varied. Anheuser Busch Inc., the world's largest brewer, is headquartered in St. Louis, as is the Monsanto Company, a leader in genetic technology, and McDonnell Douglas Corporation, manufacturer of military and commercial aircraft, missiles, and electronic equipment used worldwide. Other major businesses located in Missouri include Hallmark, Inc., Procter and Gamble Paper, and automotive assembly plants owned by General Motors, Ford, and Chrysler (Missouri Division of Tourism, 2003).

About 69% of the Missouri population lived in urban areas in 1990 (2000 Census data for urban areas were unavailable at the time this report was written). The main urban areas are that of St. Louis in the east and Kansas City in the west. However, Missouri is one of the foremost agricultural states in the Midwest (Microsoft Encarta, 2003). Missouri is second in the nation in the number of farms (102,000) and second in hay and cattle operations. Missouri also is fourth in the nation in the production of grain sorghum; fifth in turkeys; sixth in potatoes, soybeans, rice, concord grapes, cattle, calves, hogs, and pigs; eighth in milk cow operations; ninth in watermelons and cheese production; tenth in corn, cotton, cottonseed, winter wheat, and broiler production; and 12th in ice cream production (Missouri Division of Tourism, 2003).

### 1.3 Study Overview and Objectives

In order to gather updated information on the number of people who use alcohol and other drugs and to estimate the number who may need or request substance abuse treatment, Missouri included in its second STNAP a telephone household survey of household adolescents and adults, thus expanding the previous scope of Missouri needs assessments to include adolescents. A computer-assisted telephone interviewing (CATI) system was used to conduct the interviews. The major aims of the telephone survey were to

- # measure the prevalence of use of alcohol and other drugs (i.e., prescription drugs, marijuana, hallucinogens, cocaine, heroin/opiates, inhalants, and methamphetamines);
- # measure the prevalence of abuse of and dependence on different substances;
- # measure history of and demand for substance abuse treatment services, and
- # measure the need for substance abuse treatment services.

An additional objective was to assess special issues of relevance to the ADA, including the prevalence of cigarette smoking, the prevalence of

gambling-related problems, and the co-occurrence of substance use and other problems.

To meet these objectives, the survey included questions about selected demographic characteristics (e.g., gender, education, race/ethnicity, employment status); the prevalence of alcohol, prescription drug, marijuana, inhalants, hallucinogens, cocaine (including crack), heroin (or other opiates), and methamphetamines; the prevalence of abuse of and dependence on each of these substances, using the Diagnostic Interview Schedule (DIS) questions (Robins, Helzer, Croughan, Williams, & Spritzer, 1981); the prevalence of injection drug use; drug treatment history; and unmet drug treatment needs and barriers to treatment. In addition, the questionnaire contained selected items about (a) physical and mental health perceptions, (b) medical problems that can be caused or aggravated by alcohol or other drug use, and (c) problems related to gambling. Estimates from these data were developed for the state as a whole and by region for various demographic categories.

#### **1.4 Substance Use and Need for Treatment in Missouri**

*The 1997 Missouri telephone survey revealed that only 16% of adults who needed treatment reported ever having received it.*

A 1997 telephone household survey conducted in Missouri revealed that 62% of adults reported using alcohol during the previous year, and 45% did so in the past month. About 8% drank heavily in the past year, and 6% did so in the past month. Approximately 7% of adults reported illicit drug use in the previous year, and 4% reported use in the past month (Kroutil et al., 1997). The 1999/2000 NHSDA model for Missouri estimated that 16% of adults aged 18 to 25 and 3% of adults aged 26 and older used an illicit drug in the past month, whereas approximately 10% of adults aged 18 to 25, and 3% of adults aged 26 and older reported binge alcohol in the past month (SAMHSA, 2002). Nationally, the 2001 NHSDA estimated that 12% of adults used an illicit drug in the past year, and 7% did so in the past month. The 2001 NHSDA also estimated that 6% of adults used alcohol heavily in the past month (SAMHSA, 2002).

The 1997 telephone survey also revealed that 9% of adults needed substance abuse treatment, but only 16% of adults who needed treatment reported ever having received it. According to ADA, 31,952 persons were admitted to substance abuse treatment in Missouri in fiscal year 2001. Approximately 67% were male, 33% were female; 64% were White, 28% were Black; and 6% were adolescents aged 17 or younger (ADA, 2002).

According to the Community Epidemiology Work Group (CEWG), cocaine emergency department mentions increased from 97 per 100,000 population in 1999 to 134 per 100,000 in 2001. In addition, out of the 19 CEWG areas, St. Louis had the second highest proportion of persons

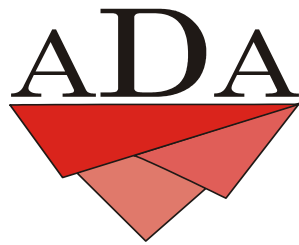


admitted to emergency departments for crack cocaine (44%). Emergency department mentions in St. Louis increased from 35 per 100,000 in 1999 to 57 per 100,000 in 2001. St. Louis is a destination market for heroin. In addition, emergency department mentions for oxycodone/combination increased 66% in St. Louis—from 92 per 100,000 in 1999 to 153 per 100,000, in 2001. Out of 19 CEWG areas, St. Louis had the 5th highest percentage of primary marijuana treatment admission (excluding alcohol) in 2001 (34%). Methamphetamine use has increased dramatically in Missouri in recent years. The Drug and Alcohol Services Information System report on admissions showed that methamphetamine treatment admissions statewide increased from 7 per 100,000 in 1993 to 63 per 100,000 in 1999—an 873% increase (NIDA, 2002).

Given the wide range of estimates obtained from previous studies regarding substance use and need for treatment, it is vital for the State of Missouri to determine with greater precision the number of adults and adolescents in need of substance abuse treatment so that the State may better develop, implement, and allocate resources for such services. This study is an attempt to provide better estimates of substance abuse and need for treatment so that the Missouri ADA can more effectively serve its residents.

## **1.5 Report Organization**

This report is divided into four sections. Section I contains information on the study design and methodology (Chapter 2) and on demographic characteristics of the sample (Chapter 3). Section II presents the results for the adult household survey and comprises four chapters: opinions about alcohol and drug issues (Chapter 4), prevalence of alcohol and drug use (Chapter 5), need for treatment (Chapter 6), and special topics (Chapter 7). Section III presents the results for the adolescent household survey and comprises three chapters: prevalence of alcohol and drug use (Chapter 8), need for treatment (Chapter 9), and special topics (Chapter 10).



## **Section I: Methodology and Demographics**

## **2. Methodology**

This study was designed to provide the State of Missouri with information about the nature and quantity of substance use and the need for treatment among Missouri residents. Household residents aged 12 and older make up the population described here. The data were collected from July 2001 to February 2002. This chapter describes the methods used to collect and analyze the data for the survey.

### **2.1 Study Sample**

*Data were collected from adolescents, aged 12 to 17, and from adults living in households with telephones.*

The 2001/2002 Missouri Household Telephone Survey was a stratified two-phase, two-stage random-digit-dialed (RDD) sample of residents aged 12 and older living in households with telephones. The RDD sample included both unlisted and listed telephone numbers. This section briefly describes the frame source materials, stratification, sample allocation, sample selection, and weighting procedures for the survey.

#### **2.1.1 Frame Source Materials**

Telcordia of Morristown, New Jersey, provides to Survey Sampling, Inc. (SSI) a magnetic tape file of all working area codes and exchanges in the United States every 6 months, or more frequently in states with area code splits or overlays. SSI also obtains a telephone directory database containing all listed residential telephone names and addresses. By merging the Telcordia file and directory file, SSI creates an RDD database with the count of listed telephone numbers within each 100-block of telephone numbers (i.e., a group of 100 telephone numbers with the same first eight digits); in an RDD design, the final two digits of a telephone number are generated randomly. Only those 100-blocks containing one or more listed telephone numbers (called active) were included on the SSI database.

Because less than 15% of households contain one or more 12- to 17-year-old adolescents, an alternative (other than RDD) sample source was developed at SSI. SSI maintains a “Targeted” database of listed households with a high probability of containing persons in specified age ranges, such as 12 to 17 years old. The source for the Targeted Adolescent listings includes age and address information from adolescent magazine subscribers, driver’s license, and school registration databases. By using these databases the probability of identifying a household with a 12- to 17-year-old increased from less than 15% to about 50%.

### 2.1.2 Frame Construction and Stratification

Using the SSI sampling frames, all active telephone exchanges within the state of Missouri were identified. Each telephone exchange was assigned to a county based on the addresses of the listed telephone residences within the exchange. If a telephone exchange overlapped two or more counties, the exchange was assigned the county containing a plurality of the listings. To control the geographic distribution of the sample, five sampling strata were created (Central, Eastern, Northwestern, Southeastern, and Southwestern). The sampling frame for each stratum contained the active 100 blocks within the telephone exchanges assigned to one of the counties within the stratum.

### 2.1.3 Sample Allocation

In this sample design, a total of 6,675 interviews—4,700 adult and 1,975 adolescents (12 to 17 years of age)—were allocated to the five sampling strata as shown in **Table 2.1**. **Figure 2.1** shows the counties constituting each stratum.

**Table 2.1 Target Number of Interviews by Geographic Sampling Stratum and by Age Group**

Age Group	Sampling Strata					Total
	Central	Eastern	Northwestern	Southeastern	Southwestern	
Adolescents	375	450	400	375	375	1,975
Adults	800	1,200	1,100	800	800	4,700
Total	1,175	1,650	1,500	1,175	1,175	6,675

Source: Missouri Household Telephone Survey: 2001/2002.

Only a small fraction of the sample of telephone numbers were expected to yield a completed interview. Noninterviews in an RDD telephone survey arise from many sources, primarily from (1) telephone numbers not assigned to residences (e.g., nonworking numbers, businesses), (2) failure to contact anyone at the telephone number after repeated attempts, and (3) refusals. Consequently, the initial sample of telephone numbers was much larger than the targeted number of interviews to compensate for the expected attrition. Over 43,000 telephone numbers were selected and allocated proportional to the targeted number of interviews in each sampling stratum.

### 2.1.4 Sample Selection

A simple random sample of telephone numbers was selected from each of the strata. The sample RDD numbers were screened by an autodialer to eliminate the known nonworking numbers and also matched to telephone directories to remove known business listings. The remaining numbers were randomly assigned to subsets called *waves*. The waves



then were provided to the Telephone Interview Operations (TIO) at RTI, on a flow basis, for additional manual screening and for interviewing. Additional details on respondent selection are provided in Section 2.2.4. A total of 43,347 numbers were eventually released to the TIO and constitute the total sample for the study.

## 2.2 Data Collection and Response Rates

### 2.2.1 Dates of Data Collection

*Interviews for the full study were conducted from July 30, 2001, to February 22, 2002.*

Interviews for the full study were conducted from July 30, 2001, to February 22, 2002, using a CATI procedure. Interviewers were trained in the use of CATI and in procedures for administering the Missouri Household Telephone Survey. An automated scheduler was used to assign telephone numbers to interviewers and to manage the flow of calls. The scheduler also managed the timing and order of callbacks.

### 2.2.2 Lead Letters and Survey Instrument

Lead letters were sent to all cases in the sample for which there was a matching address. RDD telephone numbers were sent to Telematch—a company that matches telephone numbers to addresses. Letters were also sent to all of the list-assisted cases.

The lead letter was mailed 2 to 3 weeks in advance and described the survey, why it was being conducted, and who was conducting it, and noting that the survey was completely voluntary. The letters also provided contact information in case potential respondents had any questions about the survey or their rights as research participants.

The CATI instrument for the 2001/2002 Missouri Household Telephone Survey was adapted from instruments developed for household telephone surveys conducted in other states in the mid-1990s and from the instrument developed for CSAT's Survey Core Protocol (World Health Organization, 1998). The 2001/2002 Missouri Household Telephone Survey included questions to estimate the following:

- # the prevalence of alcohol and other drug use (i.e., marijuana, hallucinogens, cocaine, [including crack], and heroin [or other opiates], inhalants, methamphetamines, or prescription drugs);
- # the prevalence of specific problems associated with substance use;
- # the prevalence of abuse and dependence on alcohol or other drugs;
- # alcohol or other drug treatment history;
- # unmet alcohol or other drug treatment needs; and

# the prevalence of treatment need among those eligible for publicly funded treatment services.

In addition, the 2001/2002 survey included items that measured adult opinions about alcohol and other drug issues, the prevalence of cigarette use, physical and mental health perceptions, substance use among women of childbearing age, and the prevalence of gambling.

Alcohol and other drug dependence was determined using criteria for dependence from the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* published by the American Psychiatric Association (APA, 1994). A copy of the lead letter is included in **Appendix A**. Copies of the survey instrument can be obtained from the Missouri ADA.

### 2.2.3 Screening

Because of the RDD design, the sample included telephone numbers for businesses and other ineligible numbers (e.g., cell phones, beepers, fax machines). Computer modems or fax machines were called at least twice (not counting ring-no-answer or busy signals) to check that the telephone number was not otherwise used as a residential number. Telephone numbers that had two consecutive fax/modem results at different times of the day and week (without an answering machine or an actual person being reached) were treated as ineligible. Telephone numbers that corresponded to other types of ineligible situations (e.g., beepers/pagers, pay telephones) were immediately screened out as ineligible.

When someone answered the telephone, interviewers screened out numbers that served businesses (including business lines out of a person's residence that were used only for business). When interviewers reached an eligible household, they first determined if they were talking to an adult aged 18 or older; if not, a call back was scheduled. When an adult was on the phone, the interviewers then obtained the number of persons in the household aged 18 and over, aged 12 to 17, and under age 12.

### 2.2.4 Household Member Selection

The selection of the household member to be surveyed was based on two key pieces of information: the number of adults and the number of adolescents (aged 12 to 17) in the household. If the household contained only adults aged 18 and older, the household was selected only 32% of the time for the first 3 months of data collection. After that time, the selection criteria were modified so that all of the adult-only households were selected for interviews. One adult within these types of households was randomly chosen to participate.

If the household contained adults and adolescents, the household was always chosen for an interview. To facilitate oversampling of adolescents aged 12 to 17, an adolescent was chosen approximately 80% of the time, and an adult was chosen approximately 20% of the time. Toward the end of data collection, the percentage of adolescents chosen in these households was raised to 90% in order to achieve more completed interviews from adolescents; this was done in an attempt to make the targeted number of completes. Once the CATI system decided whether to choose an adult or adolescent, one adult or adolescent was randomly chosen to participate.

### 2.2.5 Informed Consent

In households where an adult was randomly selected to be interviewed, the interviewers attempted to conduct the interview if the selected person was at home. If the selected person was unavailable, they set an appointment to call when the person would be at home. When they made contact with the selected household member, they explained the purpose of the study, requested permission to conduct the interview, and proceeded with the interview for those who consented.

*Before interviewing an adolescent, parental/guardian consent and adolescent assent were obtained.*

In households where an adolescent was selected, the interviewers asked to speak with a parent or guardian of the selected adolescent. If the parent or guardian was available, the interviewers explained the purpose of the study, requested permission to conduct the interview with the adolescent, asked the parent two questions about the adolescent's health coverage, and then asked to speak with the adolescent. If the parent or guardian was unavailable, they set an appointment to call when the person would be available. Once parental permission was obtained, the interviewers asked to speak with the adolescent. If the adolescent was home, the interviewers obtained adolescent assent and then attempted to complete the interview. If the adolescent was unavailable, they set an appointment to call when the adolescent would be at home.

### 2.2.6 Response Rates

Response data and response rates for the 2001/2002 Missouri Household Telephone Survey are presented in **Table 2.2**, which shows that a total of 43,347 randomly selected telephone numbers were included in the sample. Screening of the numbers identified 14,246 working telephone numbers that were assigned to households in Missouri. Of these numbers that were identified as serving households, a total of 14,149 cooperated to provide the screening information.

In the 13,859 screened households statewide, the CATI program selected an adult for the interview in 8,925 households (64% of the screened households) and an adolescent in 4,934 households (or 36% of households). A total of 4,617 adults and 1,904 adolescents completed an interview (**Table 2.3** presents the number and percentage of



**Table 2.2 Response Data, Performance Rates, and Response Rates for the Missouri Household Telephone Survey, by Age: 2001/2002**

Item	Total Missouri	Age <sup>1</sup>	
		Adult	Adolescent
Response Data			
1. Total telephone numbers	43,347		
2. Known eligible numbers with age group	14,246	14,246	5,592
2a. Completed household rostering	14,149	14,149	5,224
2a1. Household member selected for interview <sup>2</sup>	13,859	8,925	4,934
2a2. Selection rate (Item 2a1/Item 2a) * 100	98.0%	63.1%	94.4%
2b. Incomplete roster information	97	97	396
3. Known ineligible household numbers	241	241	8,952
4. Known household numbers with unknown eligibility status	1,306	1,306	1,273
5. Known nonhouseholds	10,537	10,537	10,513
6. Unknown household status numbers	14,684	14,684	14,684
7. Noncontact numbers	2,333	2,333	2,333
8. Estimated eligible households among households with unknown eligibility status numbers <sup>3</sup>	1,258	810	462
9. Estimated eligible households among unknown households status numbers <sup>3</sup>	8,484	5,463	3,203
10. Estimated eligible households among noncontact numbers <sup>3</sup>	449	289	169
11. Completed interviews	6,521	4,617	1,904
Performance Rates			
12. Resolution rate (%) = [(Item 2 + Item 3 + Item 5) / (Item 1)] * 100	57.7%	57.7%	57.8%
13. Household Eligibility rate (%) = [(Item 2)/(Item 2 + Item 3)] * 100	98.3%	98.3%	38.4%
14. Household rate (%) = [(Item 2 + Item 3 + Item 4)/(Item 2 + Item 3 + Item 4 + Item 5)] *100	60.0%	60.0%	60.1%
15. Household rate among noncontacts (%)	20.0%	20.0%	20.0%
16. Rostering rate (%) = [(Item 2a)/(Item 2)] *100	99.3%	99.3%	93.4%
Response Rates <sup>5</sup>			
17. Response rate among rostered households where a selection was made (%) = (Item 11/Item 2a1) *100	47.1%	51.7%	38.6%
18. Lower-bound response rate (%) = {Item 11/[Item 2a2 * (Item 2 + Item 4 + Item 6 + Item 7)]} * 100	20.0%	16.9%	8.2%
19. CASRO <sup>4</sup> response rate (%) = {Item 11/ [Item 2a2 * (Item 2 + Item 8 + Item 9 + Item 10)]} * 100	26.7%	29.8%	21.7%
20. Upper-bound response rate (%) = [(Item 11/ (Item 2a2 * Item 2)] * 100	45.8%	51.7%	38.6%

Note: Response data (except Item 2a2) are frequencies; performance rates and response rates are percentages.

<sup>1</sup> Adults are defined as persons aged 18 and older; adolescents are defined as persons aged 12 to 17.

<sup>2</sup> Household member was selected for the interview (regardless of whether an interview was completed).

<sup>3</sup> The call record was used to estimate the household eligibility status of telephone numbers that had unknown eligibility at the end of data collection in proportion to the outcomes for cases with known eligibility.

<sup>4</sup> The denominators for some response rates were multiplied by the selection rate (Item 2a2) because adults were not selected for an interview in some households.

<sup>5</sup> Council of American Survey Research Organizations.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 2.3 Number and Percentage of Completed Interviews by Number of Attempts and Data Collection Shifts in the Missouri Household Survey: 2001/2002**

	Completed		Not Completed	
	Number	%	Number	%
<b>Number of Attempts</b>				
1 to 4	3,345	51.3	15,481	42.0
5 to 9	2,025	31.0	6,848	18.6
10 to 14	931	14.3	3,418	9.3
15+	220	3.4	11,079	30.1
<b>Data Collection Shift<sup>1</sup></b>				
Weekend nights	423	6.5	2,445	6.6
Weekend days	1,089	16.7	6,662	18.1
Weekday nights	3,327	51.0	12,540	34.1
Weekday days	1,682	25.8	15,179	41.2

<sup>1</sup> Numbers and percentages for the "Not Completed" columns are based on the day and time of final attempt.

Source: Missouri Household Telephone Survey: 2001/2002.

completed interviews by number of attempts and data collection shifts). Most interviews were completed in the first four call attempts and on weekday evenings. Approximately 80% of the interviews were completed in nine or fewer call attempts.

Items 12 through 16 on **Table 2.2** provide performance rates associated with the sample of telephone numbers, telephone numbers assigned to households with known eligibility status, numbers with known household status, households that cooperated to provide the screening information, ineligible selected individuals, and completed interviews. The 2001/2002 Missouri Telephone Household Survey had a resolution rate of 57.7% that indicates the percentage of numbers that were successfully resolved as being eligible or ineligible for interviews. The household eligibility rate (98.3%) represents the percentage of household telephone numbers in the sample that were identified as being eligible for interviews, and was based only on numbers where the eligibility status was known at the conclusion of data collection. The rostering rate (99.3%) represents the percentage of known households where screening progressed to the point of selecting a household member for the interview or determining that no selection should be made. Thus, interviewers were able to complete the roster of the adult household members almost 100% of the time, and of adolescent household members 93% of the time, once contact had progressed far enough to determine that an eligible household had been reached.

Items 17 through 20 represent different response rates that were calculated. The first represents the response rate if contact had

progressed to the point where the CATI program had selected a household member for the interview. This rate indicates that if interviewers were able to progress far enough to select a sample member, then about 52% of adults and 39% of adolescents cooperated and provided an interview.

The remaining response rates are representative of all known or assumed eligible households. Consequently, the response rates in items 18 through 20 were based only on those households where someone was selected, or where it was assumed that someone would have been selected, had contact with the household progressed to that point. The CASRO (Council of American Survey Research Organizations) response rate was only approximately 27% (about 30% for adults and 22% for adolescents), with a lower-bound response rate of 20% and an upper bound response rate of about 46%. Thus although interviewers were able to contact a majority of households, and most of the households cooperated to provide the screening information, the true response rates were very low.

These low response rates were lower than targeted. Survey production data indicated that the number of refusals exceeded the number of completed interviews at the conclusion of data collection (data not shown in **Table 2.2**). Most of these refusals were hangups that occurred within the first few questions after someone answered the telephone. Again, however, data from **Table 2.2** indicate that if contact with the household progressed to the point of selecting someone for the interview, approximately one-half of these sample members completed the interview.

### **2.2.7 Declining Telephone Survey Response Rates**

The demand for information about people's opinions, attitudes, and behaviors has led to the widespread use of surveys. In addition, unsolicited phone calls from telemarketing have increased sharply in recent years, leading to an increase in the number of phone calls a household receives.

As a result, RDD response rates have declined steadily over the past decade and most dramatically over the past 3 years. Other main reasons for this problem are the increased number of people using answering machines, caller ID, and cell phones, as well as an increase in "sogging," or selling under the guise of research.

According to the 2000 Behavioral Risk Factor Surveillance System (BRFSS) Summary Data Quality Report, response rates to the BRFSS studies declined from a median 70% response rate in 1996 to a median 53% response rate in 2000. BRFSS response rates in Missouri decreased from 60% in 1996 to 52% in 2000, whereas nationally, BRFSS response rates in 2000 ranged from 29% to 72%.

Due to the declining response rates, the Survey Research Laboratory (SRL) at the University of Illinois conducted a survey of members of its List of Academics and Not-for-Profit Survey Research Organizations (LANSRO) to examine ways to improve response rates. Respondents were asked to provide information on their surveys so that CASRO response rates could be calculated. Based on respondent information, the mean response rate for telephone surveys conducted by 36 organizations was 47% with a median of 50%. Although the survey asked for “typical results,” it is possible that some organizations provided figures for their most successful RDD survey, making true rates actually lower than the reported mean and median (O’Rourke & Johnson, 1999).

The response rates for adults from the 1997 Missouri telephone survey was 40% (adolescents were not surveyed in 1997). Given the dramatic decline of the Missouri response rate for the BRFSS, the decline of the 1997 to 2001/2002 Missouri Household Telephone Survey response rates, while quite low, follows the same pattern as other large-scale telephone surveys.

When ADA completed the application for funding to conduct a second household telephone survey, response rates for RDD and telephone surveys in general still appeared to be respectable and response rates from large-scale, national telephone surveys still looked promising. However, the response rates that were achieved for this current survey clearly show the rapid decline in response rates in Missouri.

Low response rates are problematic because they cast into doubt the validity of the survey results. In the Missouri 2001/2002 household survey, the response rate of less than 30% raises serious concerns regarding how nonresponse bias may have affected the results of the study. Specifically, it is impossible to determine how the individuals who responded to this study may have differed compared with those who did not respond. Responders, or demographic subsets of respondents, may, for example, report significantly lower rates of substance use than nonresponders. Unfortunately, we have no way of estimating the extent, direction, or pattern of a nonresponse bias, and therefore, cannot correct for it.

Given the decline in response rates over the past several years and the low response rate for this study, it appears that researchers will need to develop alternative or innovative methods for obtaining substance use and need for treatment data in the future. Interviewer incentives is one method utilized to increase response rates. Even the 2002 NSDUH provided respondent incentives. The overall response rate for the 2002 NSDUH increased from 67.3% to 71.3% in 2001.

## 2.3 Summary of Weight Adjustments

For all responding persons, the sampling weights were first calculated as the inverse of the respondents' probability of inclusion in the survey. The weights were then adjusted to compensate for differences between people living in households with telephones and those in the Missouri population as a whole. The weights were also adjusted to compensate for differences in cooperation rates by demographic groups. Finally, the sampling weights were adjusted so they summed to the official State estimates for specific age and gender categories within four regions (post-stratification). Note that although the post-stratification weights might provide some correction of nonresponse bias, it in no way corrects any bias due to differing rates of substance use or need for treatment among respondents as compared to nonrespondents. Details regarding weighting procedures are provided in **Appendix B**.

## 2.4 Key Definitions and Measures

Definitions and measures of alcohol use, illicit drug use, substance dependence and abuse, need for treatment or intervention, and probable pathological gambling are provided below. Other measures (e.g., demographic characteristics) are self-evident or explained in the text where they are encountered.

### 2.4.1 Alcohol Use

Alcohol use was defined as any use of alcohol in the time period of interest. Heavy alcohol use in the *past year* (i.e., the 12-month period prior to the 2001/2002 survey) was defined as consumption of five or more drinks (four or more drinks for women) in a 24-hour period at least once a week in past year, or on 4 or more days in the past month. Heavy alcohol use in the *past month* was defined as consumption of five or more drinks (four or more drinks for women) in a 24-hour period on 4 or more days in the past month.

### 2.4.2 Illicit Drug Use

Any illicit drug use was defined as any use of marijuana or hashish, hallucinogens, cocaine in any form (including crack), heroin or other opiates, inhalants, or methamphetamine at least once in the time period of interest.

### 2.4.3 Prescription Drug Use

Variables were developed on use of prescription drugs in the prescribed manner and in ways other than prescribed (i.e., for reasons other than prescribed, in larger amounts than prescribed, or more often than prescribed, or without a prescription). Variables were created for use of sedatives, tranquilizers, stimulants, opiate/pain killers, antidepressants,

*The Missouri Household Telephone Survey measured symptoms of dependence and substance abuse based on DSM-IV (APA, 1994) criteria.*

and nerve pills, along with variables of use of any of these substances. Use of each substance was defined as any use in the time period of interest.

#### 2.4.4 Symptoms of Dependence and Abuse

The American Psychiatric Association (APA) has established criteria for psychoactive substance dependence or abuse that have been widely used as a standard for identifying people with serious problems, based on significant impairment in multiple domains of their lives. These criteria have been updated periodically and published in diagnostic manuals, the most recent being the *Diagnostic and Statistical Manual of Mental Disorders 4th Edition Revised (DSM-IV-R)* (APA, 1999). The Missouri Household Telephone Survey questionnaire measured symptoms of dependence or abuse based on the *DSM-IV* (APA, 1994) criteria.

For a person to meet *DSM-IV* diagnostic criteria for psychoactive substance *dependence*, three or more of the following symptoms need to have occurred:

1. tolerance, as defined by either of the following:
  - a. a need for markedly increased amounts of the substance to achieve intoxication or the desired effects
  - b. markedly diminished effect with continued use of the same amount of the substance;
2. withdrawal, as manifested by either of the following:
  - a. the characteristic withdrawal syndrome for the substance
  - b. the same (or closely related) substance is taken to relieve or avoid withdrawal symptoms;
3. the substance is taken in larger amounts or over a longer period than was intended;
4. there is a persistent desire or unsuccessful efforts to cut down or control substance use;
5. a great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects;
6. important social, occupational, or recreational activities are given up or reduced because of substance use;
7. use of the substance is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.

The Missouri Household interview asked whether these dependence symptoms had ever occurred in the respondents' lifetime. If a given symptom had ever occurred, respondents were asked when it last occurred. If respondents reported that three or more symptoms occurred in the 12 months prior to the interview, they would by definition meet lifetime criteria for dependence based on DSM-IV. If respondents did not report that three or more symptoms occurred in the past 12 months, however, the interview did not go into the degree of detail necessary to establish whether three or more symptoms occurred in *any* single 12-month period in respondents' lifetimes, but outside of the past 12 months. Therefore, for this report, persons were classified as having lifetime dependence if they reported the occurrence of three or more DSM-IV dependence symptoms at any point in their lifetime. Hence, the definition of lifetime dependence for this survey was based on DSM-IV criteria but should not be interpreted as being equivalent to a clinical diagnosis of dependence.

Respondents were classified as being dependent in the past year if they reported three or more DSM-IV symptoms in the past 12 months. As noted above, respondents who reported three or more dependence symptoms in the past 12 months would meet DSM-IV criteria for both lifetime and past year dependence.

The DSM-IV category of psychoactive substance *abuse* is a residual category for people who have abused substances but never met the criteria for a diagnosis of dependence. Among people who have never met dependence criteria, a pattern of lifetime or past year substance abuse is characterized by one or more of the following:

1. recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home;
2. recurrent substance use in situations in which it is physically hazardous;
3. recurrent substance-related legal problems;
4. continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substances.

Persons were classified as having lifetime abuse if they were not classified as being dependent in the lifetime but they reported the lifetime occurrence of one or more symptoms of abuse. By definition, persons who reported the occurrence of one or more symptoms of abuse in the past 12 months (but were not classified as being dependent in the lifetime) were classified as meeting criteria for abuse in the past year.

## 2.4.5 Partial and Full Remission

It is important to understand that a certain percentage of the population have met the definition of dependence in the past and are currently in full or partial remission. Partial remission is defined as exhibiting three or more symptoms of dependence during one's lifetime and one or two symptoms of dependence in the past year. Full remission is defined as exhibiting three symptoms in one's lifetime but none in the past year.

## 2.4.6 Need for Treatment

*Adolescents and adults who met DSM-IV criteria for past year dependence or substance abuse, or who received substance abuse treatment in the past 12 months were considered in need of treatment in the past year.*

By definition, anyone who received formal treatment services (detoxification, residential rehabilitation halfway or recovery house, outpatient rehabilitation, or methadone) in the past 12 months for abuse of alcohol or other drugs was considered in need of treatment in the past year. In addition, anyone who met the past year DSM-IV diagnostic criteria for dependence or abuse was also considered in need of treatment.

## 2.4.7 Need for Intervention

Some substance users who never met the criteria for lifetime or past year substance abuse or dependence may still be in need of treatment or some form of less intensive intervention, short of treatment in a formal program. Therefore, people were identified as in need of intervention in the past year if they never met past year dependence or abuse criteria as described in Section 2.4.4 but had a lifetime diagnosis of dependence or abuse and used that particular drug in the past 12 months, or did not have a lifetime diagnosis of dependence or abuse for a given drug and reported a "problem" pattern of use. Individuals were also considered in need of intervention if they received intervention services, such as therapy/counseling outside a formal program, self-help groups, pastoral counseling, or drinking-driver programs, for alcohol or drugs in the past 12 months.

A report of any of the following behaviors would indicate a "problem" pattern of alcohol use:

- consumption of five or more drinks in a 24-hour period by a man and four or more drinks in a 24-hour period by a woman at least once a week in the past 12 months; or
- consumption of five or more drinks in a 24-hour period by a man and four or more drinks in a 24-hour period by a woman on 4 or more days in the past month.

For drugs other than alcohol, people were defined as having a current "problem" pattern of use in the past 12 months if they indicated



- marijuana use at least once a week,
- hallucinogen use at least once a week,
- methamphetamine use at least once a week,
- any past year use of cocaine, or
- any past year use of heroin or other opiates.

Use of cocaine or heroin in the past 12 months was considered to be a “problem” pattern because of the highly addictive potential of these drugs once a person has tried them. For the other drugs, weekly use suggests “hard-core” use that may be more likely to be associated with dependence on these drugs.

#### **2.4.8 Need for Treatment or Intervention**

Anyone who met the DSM-IV criteria for need for treatment described in Section 2.4.6 or met the definition of need for intervention described in Section 2.4.7 were considered in need of treatment or intervention.

#### **2.4.9 Placement Criteria**

The American Society of Addiction Medicine (ASAM) has established Patient Placement Criteria (PPC) to place patients into appropriate levels of care. These criteria have been updated periodically and published in diagnostic manuals, such as the second edition of the ASAM Patient Placement Criteria (PPC-2) for the Treatment of Substance-Related Disorders (ASAM, 1996). ASAM placement criteria had been adapted previously for use in telephone surveys as part of the State Needs Assessment effort and were adapted for use in the Missouri Household Telephone Survey. However, the PPC-2 was developed for use by trained clinicians for assessment of clients presenting for substance abuse treatment. Consequently, the estimates presented in this report are not intended to be construed as equivalent to the results of actual clinical assessments.

The relevant PPC-2 levels assessed through the telephone survey data were as follows:

- Level I: Outpatient Treatment
- Level II: Intensive Outpatient Treatment/Partial Hospitalization
- Level III: Residential/Medically Monitored Inpatient Treatment
- Level IV: Medically Managed Intensive Inpatient Treatment

These levels of care differ in terms of the intensity of services provided. These levels also differ in terms of the need for professional supervision or monitoring to ensure patient safety and to prevent relapse.

To determine the most appropriate level of services, individuals are assessed along the following six dimensions:

I. Acute intoxication and/or withdrawal potential:

More intensive levels of care would be warranted for persons who are likely to be acutely intoxicated or at increased risk of experiencing severe withdrawal symptoms.

II. Biomedical conditions or complications:

More intensive levels of care would be warranted for persons with severe health problems that might require medical supervision, or for whom continued substance use would put them at imminent high risk of experiencing health complications.

III. Emotional/behavioral conditions and complications:

The presence of any co-occurring emotional or psychological disorders that could interfere with the treatment process would warrant a higher level of care.

IV. Treatment acceptance/resistance:

More intensive levels of care would be warranted for people who are unlikely to comply with outpatient or other less intensive treatment regimens.

V. Relapse potential:

More intensive levels of care would be warranted for people who are at increased risk for relapsing (e.g., as evidenced by a history of relapse).

VI. Recovery environment:

More intensive levels of care would be warranted for people who would have little or no social support for recovery from their pattern of substance abuse.

The Missouri telephone survey questionnaire contained items that were relevant to each of the six dimensions described above. However, the content of these questionnaires was not identical with respect to

assessment of these dimensions. Details regarding the definitions of the six dimensions are included in **Appendix C**.

In addition, the “resistance to change” dimension was given less “weight” in determining whether outpatient or intensive outpatient services might be appropriate for Missouri residents who needed treatment. This decision was based on the ASAM criteria having been originally developed for people presenting for treatment, as noted above. Within the context of a treatment intake interview, the concept of “readiness to change” is certainly relevant for assessing the most appropriate level of care. Individuals who report considerable problems in a treatment intake interview but who also feel coerced into treatment and do not see their substance use as being especially problematic may not have a successful treatment outcome at a lower level of care. Within the context of a survey of the general household population, however, the concept of “needing treatment” may be much less salient to a survey respondent, who may not have given much if any thought to the idea of substance abuse treatment prior to being called by the telephone interviewer. Consequently, telephone survey respondents who would meet objective criteria for needing substance abuse treatment but do not consider themselves to need treatment may not necessarily be “resistant” to treatment in the clinical sense (and, therefore, would not necessarily require a higher level of care).

Once the code for the five levels of care was executed, a hierarchical approach was used that first checked whether a respondent met the criteria at Level IV. Those respondents who did not meet the criteria at Level IV were checked to see whether they met the criteria at Level III, and so on.

Some individuals may meet criteria for more than one level of care, but they are classified at the highest level only. As a result, policy makers and planners might conclude (perhaps erroneously) that these people require only the highest level of services for which they qualify and not address the other levels of care for which individuals may be in need.

#### **2.4.10 Need for Publicly Funded Treatment Services**

The variable for eligibility for publicly funded treatment services is based on hierarchical exclusion. First, we combined household income and family size to determine if the family was at or below 150% of the federal poverty guideline. This is the standard used by Missouri to determine eligibility for publicly funded services. Those below the guideline were considered eligible, and those above ineligible. If the income/household size measure was missing, we determined if the respondent had recently received other public assistance. Those who had were coded as eligible, and those who had not were coded ineligible. If eligibility was still undetermined after the above two steps, we made a final determination by examining responses to questions on

how respondents who were in need or had received treatment would or did pay for treatment.

#### **2.4.11 Probable Pathological Gambling**

Respondents who reported gambling more than 5 days in the past year were asked a series of eight questions on problems related to gambling in order to assess lifetime prevalence of gambling problems and lifetime prevalence of pathological gambling, based on DSM-IV criteria. These questions asked about:

- # increased preoccupation with gambling;
- # need to gamble with increased amounts of money to achieve the desired level of excitement;
- # feelings of restlessness or irritability when unable to gamble;
- # gambling to escape from problems;
- # attempts to go back to try to win back gambling losses;
- # lying to others about the extent of one's gambling;
- # jeopardizing relationships, a job, or career opportunities because of gambling; and
- # borrowing money to relieve financial problems caused by gambling.

An affirmative answer to *at least one* of the eight items was considered to be indicative of *problem gambling* at some point in a person's life, but not necessarily pathological gambling. Answering affirmatively to *three or more* of the eight problem items was considered to indicate *probable pathological gambling* in the lifetime, based on guidance from Dr. H. R. Lesieur (H. R. Lesieur, personal communication, June 10, 1991), a noted expert on issues of pathological gambling (Lesieur, 1989; Lesieur & Blume, 1987).

### **2.5 Procedures for Analysis**

The overriding goal of this survey of the Missouri household population was to develop reliable and valid estimates of the need for treatment for alcohol and other drug use among the state's household population and related subpopulations. These estimates, along with data on such issues as the prevalence of *untreated* substance abuse or dependence, or barriers to entering drug treatment, will be useful to policy makers and planners at the state and federal levels in their decision making about treatment needs, priorities, and resource allocation.

To accomplish these aims, two basic types of analyses were conducted within this study:

- # descriptive univariate and bivariate analyses of the prevalence of substance use, need for treatment, and demand for treatment services; and
- # multivariate logistic regression analyses of the co-occurrence of substance use and other problems.

Most analyses were descriptive cross-tabulations of the responses from two or more variables. Logistic regression analyses were used in Chapter 7 to model outcome measures of various health indicators as a function of substance use and demographic variables. In logistic regression, the natural log of the odds (i.e.,  $\ln p/1-p$ ) is modeled as a linear function of the independent variables. The parameters of a logistic regression model are transformed to reflect relative changes in the odds due to changes in the independent variables.

All statistical analyses were performed using RTI's proprietary software, called SURvey DATA ANalysis or SUDAAN. The SUDAAN software fully accounts for the complex features of the sample design, including stratification and unequal weights (Shah, Barnwell, & Bieler, 1997).

In most tables, percentages are rounded to the nearest tenth of a percent. However, in some situations where the measure of interest was likely to be low (e.g., dependence or abuse for drugs other than alcohol or marijuana), estimates are rounded to the nearest *hundredth* of a percent. Likewise, in situations where the estimated number of people showing a characteristic of interest was likely to be small, estimates are rounded to the nearest hundred people instead of to the nearest thousand people.

Because the estimates presented in this report are from a sample of persons in Missouri households with telephones, as opposed to being a census of every person in the state, there is some natural uncertainty regarding these estimates. A second, independent sample might have produced lower or higher estimates than what are presented in this report, simply by virtue of who was in the sample. In addition, even though more than 6,500 interviews were obtained throughout the state, the precision of estimates decreases as data are subdivided by demographic characteristics or planning regions because the effective sample size decreases.

Confidence intervals, or ranges that are very likely to include the true population value, are shown for estimated percentages and numbers of people having a characteristic of interest, such as the estimated number of people in need of treatment. These confidence intervals serve as

reminders that estimates shown in this report for the number of people having a particular characteristic (e.g., needing substance abuse treatment services) may be somewhat higher or lower than the actual number of people in the population meeting this characteristic. The confidence intervals also provide a more concrete indication of the degree of uncertainty associated with an estimated population count. The narrower the confidence interval, the more certainty there is regarding where the true population value is likely to be.

In this report, estimates that were considered to be unreliable are not presented. More specifically, estimates were suppressed that could not be reported with confidence because they either were based on very small sample sizes or had large sampling errors. The rules for classifying estimates as unreliable are explained in **Appendix D**. Unreliable estimates that were omitted are noted by a single asterisk (\*) in the tables. Very small estimates that were not suppressed, but that rounded to zero, are also omitted from the tables and are shown as two asterisks (\*\*).

In addition, if an estimated percentage was less than 0.05% (for estimates shown to the nearest tenth of a percentage) or less than 0.005% (for estimates shown to the nearest hundredth of a percentage), any accompanying estimate of the number of people showing this characteristic was shown with a double asterisk. This was done to minimize confusion or misunderstanding that could occur if an estimated percentage was reported as rounding to zero, but an estimated number of people had been shown.

## 2.6 Study Limitations

Surveys have been and continue to be a scientifically acceptable method for obtaining self-report data about a wide variety of behaviors, including substance use. A major strength of the 2001/2002 Missouri Household Telephone Survey is that it permitted the collection of a rich array of information about the nature and extent of behaviors of interest along with information about their correlates. Other strengths of the survey include the use of sophisticated sampling techniques and widely used questionnaire items that allow for precise estimates of substance use and treatment need.

Despite these strengths, survey results also are subject to the potential bias of self-report and to the ambiguities caused by questions with varying interpretations. In addition, there can be other potential problems with the validity of survey data, including issues of population coverage and response rates. If the population is not properly represented in the survey, biases may be introduced that can weaken the validity of the survey results. Fortunately, the design and field procedures of the 2001/2002 Missouri Household Telephone Survey addressed most of these concerns. A pretest was used to identify and

respond to any ambiguities that might have been present in the questionnaire, and the household population appears to have been adequately represented in the study. As noted above, however, the low response rates are a major cause of concern regarding the validity of estimates from this survey.

In addition, individuals may question the validity of self-reported data on sensitive topics, such as alcohol and drug use, claiming that survey respondents will give socially desirable, rather than truthful answers. A series of studies has demonstrated that although self-reports may sometimes underestimate the extent of substance use, the method generally provides useful and meaningful data (Harrison, 1995; Rouse, Kozel, & Richards, 1985). A general conclusion emerging from this work is that most people appear to be truthful (within the bounds of capability) under the proper conditions. Such conditions include believing that the research has a legitimate purpose, having suitable privacy for providing answers, having assurances that answers will be kept confidential, and believing that those collecting the data can be trusted (Harrison, 1995; Johnston & O'Malley, 1985).

Despite this prior research, doubts may still be raised about people's willingness to provide truthful answers to sensitive questions over the telephone. Indeed, Gfroerer and Hughes (1992) reported that a telephone survey on drug use yielded significantly lower estimates of some drug use, compared with data from a face-to-face interview. However, prevalence estimates from telephone surveys conducted by the New York State Division of Substance Abuse Services in the early 1980s actually yielded higher estimates for several drugs compared with a face-to-face survey (Frank, 1985). Aquilino and LoSciuto (1990) found that telephone interviews yielded lower estimates of drug use for Blacks in New Jersey compared with face-to-face-interviews, but the mode of interviewing had little effect on drug use estimates for Whites.

In addition, findings from a telephone survey assessment of treatment needs in Rhode Island in the late 1980s (McAuliffe, Breer, Ahmadifar, & Spino, 1991) suggested that potential threats to the validity of the survey estimates due to nonresponse or underreporting did not present a problem. The researchers found that respondents who initially refused to be interviewed but later agreed to participate were actually *less* likely to report use of different illicit drugs compared with respondents who had never refused. The researchers in the Rhode Island needs assessment also found no significant differences in estimates of drug use between "hard-to-reach" respondents and those who required less intensive follow-up efforts. As a check for possible underreporting of drug use, 167 respondents (total  $N=5,176$ ) were given the opportunity to disguise their answers based on the results of a toss of three coins, without the interviewer knowing the results of the coin toss (i.e., a randomized response). Respondents in this randomized response group

were no more likely to report drug use than were those respondents who were asked about their drug use without giving a randomized response.

Although the research findings are mixed with regard to reporting of sensitive behaviors through a telephone survey, some of these studies provide evidence to suggest that telephone surveys can yield reasonable estimates of drug use. Furthermore, procedures were followed rigorously in the Missouri Household Telephone Survey to encourage honest reporting. These procedures included (a) telephone numbers being chosen at random, (b) availability of contact persons at RTI (including a toll-free number) and in Missouri whom people could call if they had questions about the legitimacy of the study, (c) assurances of confidentiality and measures to protect the confidentiality of respondents' answers, (d) conducting the interviews privately (i.e., with the respondent being the only person in the household hearing the questions), and (e) structuring of the questionnaire to build rapport prior to when the more sensitive questions were asked.

The estimates reported here are likely to represent the lower bound of substance use rates and need for treatment due to underreporting and nonresponse. The data reported here should be considered in combination with data resulting from other studies conducted under Missouri's overall State Treatment Needs Assessment Project.



### 3. Demographic Characteristics

This chapter presents information on the number of respondents within demographic subgroups, as well as the demographic characteristics of the survey respondents both before and after weighting. The weighted data in these tables reflect the demographic characteristics of the Missouri household population in terms of sex, age, race/ethnicity, student status, and current employment status. In addition, data on marital status and education are presented for adults.

#### 3.1 Demographic Characteristics of the Adult Sample

By sample design, comparison of the unweighted and weighted percentages by sampling strata indicates that adults in the Central and Southeast sampling strata were slightly overrepresented in the sample (i.e., unweighted percentages of 18.4% and 17.5%) relative to their representation in the adult household population as a whole (i.e., weighted percentages of 13.5% and 12.1%) as shown in **Table 3.1**. Residents in the Eastern stratum were slightly underrepresented in the sample in comparison to the state as a whole (25.0% unweighted vs. 35.4% weighted).

Males were somewhat underrepresented, with about 39% of the unweighted sample being male, compared with about 48% of the weighted sample. About 64% of the 2001/2002 Missouri Household Telephone Survey respondents were aged 18 to 54 compared to almost 70% of the weighted sample. Young adults aged 18 to 24 and 25 to 34 were slightly underrepresented in the sample (i.e., unweighted percentages of about 11% and 15%, respectively) relative to their representation in the adult household population as a whole (i.e., weighted percentages of 13% and 18%, respectively).

*Male, Black, and married adults were somewhat underrepresented in the adult sample.*

Comparison of other unweighted and weighted percentages for the demographic subgroups in **Table 3.1** indicates that Blacks were slightly underrepresented in the sample relative to their proportion in the adult household population as a whole (6% unweighted and 10% weighted). This table also shows that widowed, divorced, and separated individuals were somewhat overrepresented (25% unweighted and 16% weighted) whereas adults who were married or living as married were slightly underrepresented (59% unweighted and 67% weighted). The weighted and unweighted percentages for current employment status were nearly equivalent.

**Table 3.1 Number of Respondents and Demographic Characteristics of the Missouri Adult Household Population: 2001/2002**

<b>Demographic Characteristic</b>	<b>Number of Respondents</b>	<b>Unweighted Percentage</b>	<b>Weighted Percentage</b>
<b>Total Missouri</b>	4,616	100	100
<b>Strata<sup>1</sup></b>			
Central	849	18.4	13.5
Eastern	1,155	25.0	35.4
Northwest	1,020	22.1	24.2
Southeast	809	17.5	12.1
Southwest	783	17.0	14.7
<b>Gender</b>			
Male	1,792	38.8	47.7
Female	2,824	61.2	52.3
<b>Age</b>			
18–24	502	10.8	12.9
25–34	697	15.1	17.7
35–54	1,761	38.1	39.1
55 or older	1,656	35.9	30.3
<b>Race/Ethnicity</b>			
White	4,019	87.1	85.4
Black	278	6.0	10.1
Hispanic	68	1.5	1.8
Other <sup>2</sup>	251	5.4	2.7
<b>Marital Status<sup>3</sup></b>			
Single	741	16.1	16.6
Married/living as married	2,735	59.3	67.0
Widowed/divorced/separated	1,134	24.6	16.4
<b>Education<sup>3</sup></b>			
Less than high school	543	11.8	10.6
High school	1,559	33.8	33.0
Some college	1,272	27.3	27.0
College graduate or higher	1,235	26.8	29.4
<b>Student Status</b>			
In school	513	11.1	13.7
Not in school	4,102	88.9	86.3
<b>Current Employment<sup>3</sup></b>			
Full-time	2,349	51.0	53.4
Part-time	574	12.5	13.2
Unemployed <sup>4</sup>	120	2.6	2.5
Other <sup>5</sup>	1,564	34.0	31.0

Note: Percentages may not sum to 100 due to rounding.

<sup>1</sup> Definitions for sampling strata can be found in Figure 2.1.

<sup>2</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

<sup>3</sup> Totals for marital status, education, school status, and current employment may not sum due to missing data and respondent break-offs.

<sup>4</sup> Includes persons looking for work or not looking for work.

<sup>5</sup> Retired, disabled, homemaker, student, or “other.”

Source: Missouri Household Telephone Survey: 2001/2002.

### 3.2 Demographic Characteristics of the Adolescent Sample

**Table 3.2** shows the comparison of the unweighted and weighted percentages by sampling strata for the adolescent sample. As in the adult sample, and due to the sample design, adolescents in the Central and Southeast sampling strata were somewhat overrepresented in the sample (i.e., unweighted percentages of 21% and 19%) relative to their representation in the adolescent household population as a whole (i.e., weighted percentages of about 13%). Residents in the Eastern and Northwest strata were slightly underrepresented in the sample (22% and 19%, respectively) in comparison to the weighted percentages for the state as a whole (37% and 24%, respectively).

*Blacks were somewhat underrepresented in the adolescent sample.*

Sex and age group representation in the sample were nearly equivalent with the distributions for adolescents in the state as a whole. As in the adult sample, Blacks were somewhat underrepresented, with about 5% of the unweighted sample and 14% of the weighted sample being Black. The weighted and unweighted percentages for student and employment status were roughly equivalent.

**Table 3.2 Number of Respondents and Demographic Characteristics of the Missouri Adolescent Household Population: 2001/2002**

<b>Demographic Characteristic</b>	<b>Number of Respondents</b>	<b>Unweighted Percentage</b>	<b>Weighted Percentage</b>
<b>Total Missouri</b>	1,905	100	100
<b>Strata<sup>1</sup></b>			
Central	401	21.0	12.8
Eastern	418	21.9	36.7
Northwest	366	19.2	24.0
Southeast	361	19.0	12.5
Southwest	359	18.8	14.0
<b>Gender</b>			
Male	945	49.6	51.3
Female	959	50.4	48.7
<b>Age</b>			
12-14	911	47.8	49.9
15-17	994	52.2	50.1
<b>Race/Ethnicity</b>			
White	1,637	85.9	80.7
Black	88	4.6	13.5
Hispanic	61	3.2	2.6
Other <sup>2</sup>	119	6.3	3.1
<b>Student Status<sup>3</sup></b>			
In school	1,868	98.2	98.4
Not in school	35	1.8	1.6
<b>Current Employment<sup>3</sup></b>			
Full-time	28	1.5	1.4
Part-time	360	19.1	18.0
Unemployed <sup>4</sup>	4	0.2	0.4
Other <sup>5</sup>	1,496	79.2	80.2

Note: Percentages may not sum to 100 due to rounding.

<sup>1</sup> Definitions for sampling strata can be found in Figure 2.1.

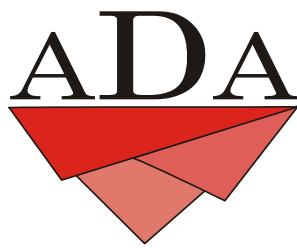
<sup>2</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, those reporting multiple races.

<sup>3</sup> Totals for school status and current employment may not sum due to missing data and respondent break-offs.

<sup>4</sup> Includes persons looking for work or not looking for work.

<sup>5</sup> Retired, disabled, homemaker, student, or "other."

Source: Missouri Household Telephone Survey: 2001/2002.



**Section II: Substance Use and Need for  
Treatment among Missouri  
Household Adults**

## **4. Opinions of Missouri Adults about Drug and Alcohol Issues**

This chapter reviews the opinions of adults in Missouri concerning drug and alcohol issues. These include opinions about the severity of drug abuse and alcohol abuse problems and allocation of resources to combat drug and alcohol problems. Comparisons are presented by age group.

### **4.1 Opinions about Alcohol Abuse in Missouri**

Adults were asked about their views on alcohol abuse. The alcohol abuse questions asked whether the respondents felt that alcohol abuse was a much greater problem, a somewhat greater problem, a similar problem, somewhat less of a problem, or much less of a problem than it had been 5 years before. The respondents also were asked whether they felt that alcohol abuse would be worse, the same, or less of a problem in 5 years. As shown in **Figure 4.1**, approximately 17% of the Missouri adult population thought that alcohol abuse was a much greater problem in 2001/2002 than it had been 5 years before (i.e., 1996). These were notably lower percentages than those observed for drugs. Respondents in the youngest age group (18 to 24) were less likely than those in the other age groups to think that alcohol abuse was a much greater problem than in the past. About 13% of residents believed that the problem would become much worse in the coming 5 years (see **Figure 4.2**).

*Nearly 17% of adults in Missouri thought alcohol abuse was a much greater problem in 2001/2002 than it had been 5 years before.*

### **4.2 Opinions about Drug Abuse in Missouri**

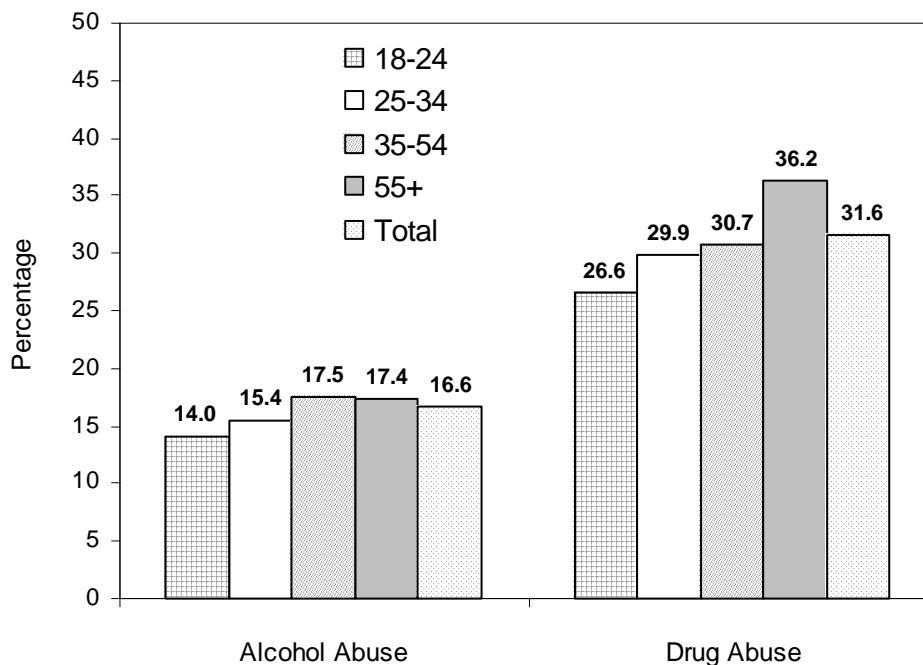
Adult respondents were also asked about their views on drug abuse, specifically, whether they felt that drug abuse was a much greater problem, somewhat greater problem, a similar problem, somewhat less of a problem, or much less of a problem than it was 5 years before (i.e., 1996). The same question was asked about whether they felt that drug abuse would be worse, the same, or improved in 5 years (i.e., 2006). As shown in **Figure 4.1**, approximately one-third (32%) of the adult population thought that drug abuse was a much greater problem in 2001/2002 than it had been in the past. Although there was little difference by age, adults 55 and older were more likely to report that drug abuse in Missouri was a much greater problem than in 1996. Approximately one-fourth (25%) of adults 55 and older believed that the problem would be much greater in the coming years (see **Figure 4.2**).

*Nearly one-third of Missouri adults thought drug abuse was a much greater problem than it had been 5 years before.*

### **4.3 Opinions about the Importance of State Services**

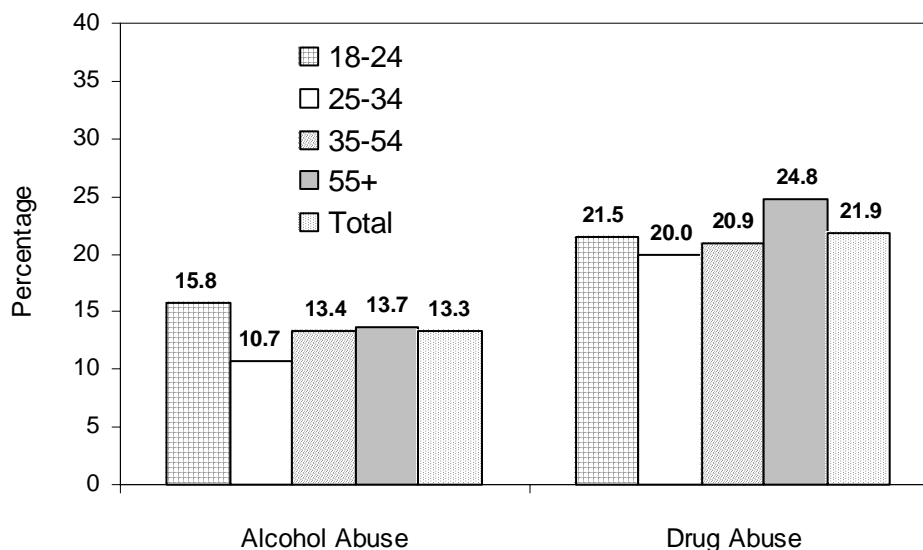
Adults were asked how important they considered mental health, mental retardation, and substance abuse treatment and prevention in comparison to other services provided by the state. They were asked if

**Figure 4.1 Percentage Reporting Alcohol and Drug Abuse in Missouri as a Much Greater Problem than 5 Years Before in the Missouri Adult Household Population: 2001/2002**



Source: Missouri Household Telephone Survey: 2001/2002.

**Figure 4.2 Percentage Reporting Alcohol and Drug Abuse in Missouri as Becoming a Much Greater Problem 5 Years from Now in the Missouri Adult Household Population: 2001/2002**



Source: Missouri Household Telephone Survey: 2001/2002.

each of these services was very important, moderately important, only slightly important, or not important at all. The majority of respondents (65% to 78%) felt that each of these services was very important (see **Table 4.1**). Adults 55 and older reported with greatest frequency that mental health services (75%) and substance abuse prevention services (72%) were very important. Adults aged 18 to 24 reported with greatest frequency that mental retardation (78%) and substance abuse treatment (69%) services were very important.

#### **4.4 Opinions about Resource Allocation to Combat Missouri's Alcohol Problem**

*Approximately half of adults indicated they would evenly allocate resources between prevention/treatment and law enforcement to combat the alcohol (45%) and drug (52%) problem in their community. More than one-third would allocate resources "mostly" or "all" to prevention and treatment.*

Adult respondents were asked to decide what they would do if they were in charge of spending an extra \$10 million to fight the alcohol problem in their community. They were asked whether they would spend it all on law enforcement, mostly on law enforcement, evenly allocate the money between law enforcement and prevention and treatment, mostly on prevention and treatment, all on prevention and treatment, or none of it to fight the drug problem.

As shown in **Table 4.2**, about (40%) wanted to allocate resources "mostly" or "all" to prevention and treatment, and almost half (45%) wanted an even allocation between prevention/treatment and law enforcement. In contrast, only 14% recommended that "most" or "all" allocations go to law enforcement. Although few residents favored allocating all of the money to law enforcement, or all to prevention and treatment, those who did were more likely to favor spending it all on prevention or treatment (12%) than all on law enforcement (3%). Less than 1% indicated that they would not spend any money on fighting alcohol abuse. There were few differences of opinion by age.

#### **4.5 Opinions About Resource Allocation to Combat Missouri's Drug Problem**

Similarly, adults were also asked to imagine what they would do if they were in charge of deciding how to spend an extra \$10 million to fight the drug problem in their community. Again, they were asked whether they would spend it all on law enforcement, mostly on law enforcement, evenly allocate the money (between enforcement and prevention/treatment), spend it mostly on prevention and treatment, or spend it all on prevention and treatment.

As shown in **Table 4.2**, about 33% of the adults wanted to allocate resources "mostly" or "all" to prevention and treatment, and 51% wanted an even allocation between prevention/treatment and law enforcement. In contrast, only 15% recommended that "most" or "all" be allocated to law enforcement. Although few residents favored allocating all of the money to law enforcement, or all to prevention and treatment, those who did were more likely to favor spending it all on



**Table 4.1 Percentages of Missouri Adult Household Population Reporting Services as Very Important in Comparison to Other Services Provided by the State: 2001/2002**

	Age Group								Total	
	18-24		25-34		35-54		55+			
	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>
Mental Health	70.1	63.8 – 75.8	64.9	59.9 – 69.7	71.5	68.1 – 74.6	74.8	71.6 – 77.7	71.1	69.1 – 73.0
Mental Retardation	77.8	71.7 – 83.0	75.4	70.7 – 79.5	76.6	73.4 – 79.6	73.2	69.9 – 76.2	75.5	73.6 – 77.4
Substance Abuse Treatment	69.3	62.9 – 75.0	64.8	59.7 – 69.5	66.7	63.2 – 70.0	67.3	63.9 – 70.6	66.9	64.8 – 68.9
Substance Abuse Prevention	66.0	59.4 – 72.0	68.3	63.3 – 72.9	70.8	67.4 – 73.9	72.0	68.8 – 75.1	70.1	68.1 – 72.0

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 4.2 Percentages of Missouri Adult Household Population Reporting How They Would Spend Extra \$10 Million to Fight Alcohol and Drug Problem in Their Community: 2001/2002**

	Age Group								Total	
	18–24		25–34		35–54		55+			
	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>
<b>Alcohol Problem</b>										
All on law enforcement	3.1	1.5 – 6.2	3.2	1.8 – 5.6	2.6	1.7 – 4.1	4.7	3.4 – 6.5	3.4	2.7 – 4.3
Most on law enforcement, but some on prevention/ treatment	12.3	8.5 – 17.5	11.8	8.9 – 15.6	10.5	8.6 – 12.7	8.7	6.9 – 10.8	10.4	9.2 – 11.8
About half on law enforcement and half on prevention/ treatment	45.0	38.5 – 51.6	42.5	37.5 – 47.6	42.8	39.2 – 46.4	50.2	46.6 – 53.7	45.2	43.1 – 47.4
Most on prevention/treatment, but some on law enforcement	26.3	21.1 – 32.3	33.3	28.7 – 38.3	31.0	27.8 – 34.5	23.9	21.0 – 27.0	28.7	26.7 – 30.7
All on prevention/treatment	11.8	7.9 – 17.1	9.1	6.6 – 12.5	12.5	10.3 – 15.1	11.7	9.7 – 14.1	11.6	10.2 – 13.0
None on this problem	1.5	0.4 – 5.9	*	*	0.6	0.3 – 1.5	0.9	0.4 – 1.8	0.7	0.4 – 1.2
<b>Drug Problem</b>										
All on law enforcement	3.4	1.6 – 7.0	3.0	1.6 – 5.3	3.4	2.3 – 5.0	5.2	3.8 – 7.1	3.9	3.1 – 4.8
Most on law enforcement, but some on prevention/treatment	10.6	7.4 – 15.1	13.7	10.6 – 17.5	10.6	8.7– 12.9	9.3	7.4 – 11.5	10.8	9.5 – 12.1
About half on law enforcement and half on prevention/ treatment	52.2	45.6 – 58.7	49.8	44.7 – 54.9	50.8	47.2 – 54.4	52.6	49.0 – 56.0	51.3	49.2 – 53.5
Most on prevention/treatment, but some on law enforcement	21.8	17.0 – 27.7	24.9	20.7 – 29.6	23.5	20.5 – 26.7	21.5	18.7 – 24.5	22.9	21.1 – 24.8
All on prevention/treatment	11.3	7.7 – 16.2	8.2	5.8 – 11.6	10.7	8.6 – 13.2	10.6	8.6 – 12.9	10.3	9.0 – 11.7
None on this problem	0.7	0.2 – 2.8	0.4	0.1 – 2.6	1.0	0.4 – 2.1	0.9	0.4 – 1.8	0.8	0.5 – 1.3

Note: Percentages may not sum to 100 due to rounding.

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated percentage.

\* Low precision; no estimate reported.

Source: Missouri Household Telephone Survey: 2001/2002.

prevention or treatment (10%) than on law enforcement (4%). Less than 1% indicated that they would not spend any money on fighting drug abuse.

## **4.6 Summary**

Taken together, the findings in this chapter indicate that Missouri adults think that alcohol and drug abuse is an important issue. To combat either alcohol or other drug problems, findings suggest that most adults would support allocation of resources that are evenly distributed between law enforcement and prevention/treatment or in ways that favor prevention and treatment. There was little support for strictly law enforcement or criminal justice approaches to combat alcohol or other drug problems. What is not known, however, is whether these opinions would translate into public support for additional education and treatment resources given the sizable percentages and numbers of adults in this population who need treatment or other services (see Chapter 6).

## 5. Prevalence and Correlates of Adult Alcohol and Illicit Drug Use

This chapter presents information regarding the prevalence and correlates of alcohol and illicit drug use among the adult household population of Missouri residents. In addition, this chapter examines the use of multiple substances in the year prior to the survey and the medical and nonmedical use of psychotherapeutics. Data for Missouri residents are also compared to data from 1997 Missouri Survey and the 2001 NHSDA.

*Sixty-four percent of adult household residents in Missouri used alcohol in the 12 months prior to the survey.*

### 5.1 Estimates of Alcohol Use

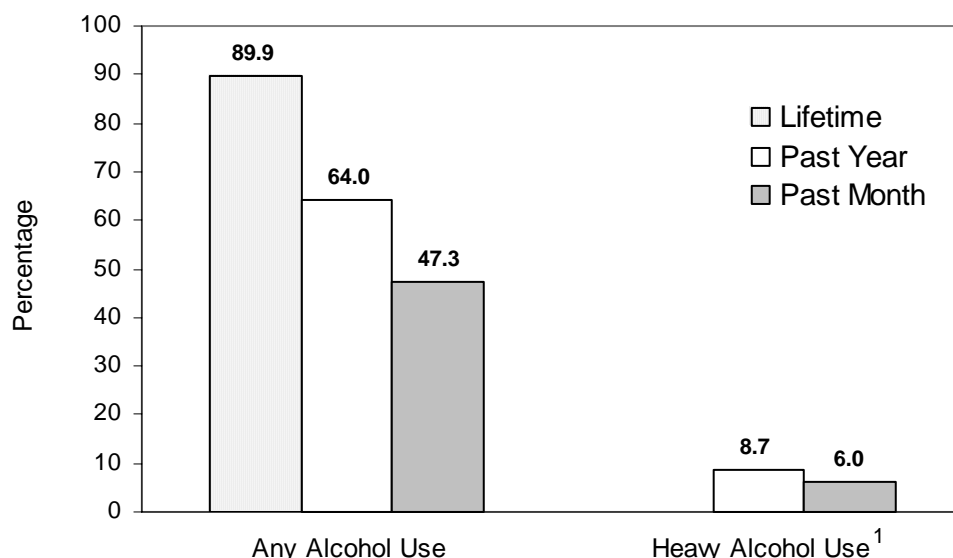
**Figure 5.1** presents the lifetime, past year, and past month prevalence of alcohol use among Missouri adults. Statewide, approximately 90% of adults in the household population had ever consumed alcohol, approximately 64% drank in the year before the survey, and 47% drank in the month prior to the survey. These rates are similar to those from the 1997 Missouri Survey (90% lifetime, 62% past year, and 45% past month).

*About 360,000 Missouri adults (or 9%) were heavy alcohol users in the past 12 months, and 248,000 adults (or 6%) drank heavily in the past month.*

Because alcohol use is legal for most adults, a general measure of alcohol use among Missouri residents would not be sufficient for detecting alcohol problems in the population. Most adults drink some alcohol if only occasionally or socially. However, heavy alcohol use is much less common and may be considered a measure of problematic alcohol use. As shown in **Figure 5.1** and **Table 5.1**, an estimated 9% of adults in the Missouri household population drank heavily in the year before the 2001/2002 survey, and 6% did so in the month before the survey. These estimates are equivalent to about 360,000 heavy alcohol users in the past year and about 248,000 in the past month. Again, these numbers are similar to those in 1997 (325,000 heavy alcohol users in the past year and 250,000 in the past month).

**Table 5.2** presents data regarding past year and past month heavy alcohol use among various demographic groups. Adults who lived in the Central Region, were male, younger, unmarried, Hispanic, currently in school, and unemployed were the most likely to engage in heavy alcohol use. Males were significantly more likely to drink heavily than females, and adults 18 to 24 were significantly more likely to do so than adults in the other age groups. Adults who were married or living as married were significantly less likely to use alcohol heavily than single, widowed, divorced, or separated adults. The relationships between heavy alcohol use, sex, and age group in Missouri are mostly consistent with national-level data (SAMHSA, 2001). **Table 5.3** shows the number and percentage of past year heavy alcohol users by service area.

**Figure 5.1 Percentages of Alcohol Use in the Lifetime, Past Year, and Past Month in the Missouri Adult Household Population: 2001/2002**



<sup>1</sup> For the past year, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month. For the past month, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period on 4 or more days.

Source: Missouri Household Telephone Survey: 2001/2002.

As shown in **Table 5.2**, men in Missouri engaged in past year (12.5%) and past month (8.7%) heavy alcohol use at more than twice the rate for women (5.3% and 3.5%, respectively). Thus, despite the “threshold” number of drinks being slightly higher for men than for women in terms of defining someone as a heavy alcohol user (i.e., five or more drinks per occasion for men vs. four or more drinks per occasion for women), men still had appreciably higher rates of heavy alcohol use.

Rates of heavy alcohol use in Missouri declined with age. About 20% of adults aged 18 to 24 drank heavily in the past year, compared with 8.7% of those aged 25 to 34, 8.4% of those aged 35 to 54, and 4.3% of those aged 55 and older. Similarly, those aged 18 to 24 were the most likely of all age groups to have used alcohol heavily in the past month (14.7%). This youngest group was seven times as likely as those aged 55 or older to have engaged in heavy alcohol use in the past month.

Marital status was associated with heavy alcohol use in the past year. Among the different marital status groups, residents who were single (i.e., never married) had the highest rate of heavy alcohol use for the past year, whereas adults who were widowed, divorced, or separated had the highest rate of past month heavy alcohol use. However, the effects of marital status are highly correlated with age, and the

*Some of the highest rates of heavy alcohol use in the past year were observed for males, adults between the ages of 18 and 24, and adults who had never been married.*

**Table 5.1 Estimated Numbers (in Thousands) of Alcohol Users in the Lifetime, Past Year, and Past Month in the Missouri Adult Household Population by Region: 2001/2002**

Alcohol Use	Period of Use					
	Lifetime		Past Year		Past Month	
	Number (Thousands)	95% CI <sup>1</sup>	Number (Thousands)	95% CI <sup>1</sup>	Number (Thousands)	95% CI <sup>1</sup>
<b>Any Alcohol Use</b>	3,743	3,688 – 3,791	2,662	2,578 – 2,745	1,969	1,880 – 2,059
Central	497	478 – 512	334	305 – 361	233	205 – 262
Eastern	1,382	1,350 – 1,406	1,110	1,058 – 1,158	877	818 – 934
Northwest	909	881 – 931	639	596 – 679	432	389 – 476
Southeast	452	436 – 465	261	236 – 286	186	162 – 212
Southwest	502	474 – 526	319	286 – 352	241	209 – 275
<b>Heavy Alcohol Use<sup>2</sup></b>	--	--	360	309 – 418	248	206 – 298
Central	--	--	53	37 – 76	41	26 – 63
Eastern	--	--	131	98 – 172	101	74 – 137
Northwest	--	--	89	66 – 118	48	32 – 71
Southeast	--	--	44	30 – 63	30	20 – 47
Southwest	--	--	43	28 – 66	28	16 – 48

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated number of people.

<sup>2</sup> For the past year, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month. For the past month, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period on 4 or more days.

-- Not applicable.

Source: Missouri Household Telephone Survey: 2001/2002.

independent effects of age and marital status are difficult to disentangle. Nevertheless, these data suggest that the status and role stability associated with marriage may exert a “protective effect” with regard to certain risk behaviors, such as heavy drinking.

Among different educational groups, heavy drinking during both the past year (11.9%) and past month (8.5%) was most commonly reported by individuals with less than a high school education. Adults with some college had rates similar to those of adults with less than a high school education. College graduates had the lowest rates of past year (6.7%) and past month (5.0%) heavy alcohol use. The lower rates of heavy drinking for adults with college degrees may be a function of family and economic responsibilities that increase with age and are associated with full-time work. Unclear from these analyses, however, is the extent to which education is associated with both age and employment status, and

**Table 5.2 Prevalence of Heavy Alcohol Use in the Past Year and Past Month in the Missouri Adult Household Population, by Selected Demographic Characteristics: 2001/2002**

Demographic Characteristic	Period of Use <sup>1</sup>			
	Past Year		Past Month	
	%	95% CI <sup>2</sup>	%	95% CI <sup>2</sup>
<b>Total Missouri</b>	8.7	7.5 – 10.1	6.0	5.0 – 7.2
<b>Region</b>				
Central	9.5	6.5 – 13.6	7.2	4.6 – 11.2
Eastern	8.9	6.7 – 11.7	6.8	5.0 – 9.3
Northwest	9.0	6.7 – 11.9	4.8	3.2 – 7.0
Southeast	8.7	6.0 – 12.5	6.0	3.9 – 9.2
Southwest	7.0	4.5 – 10.8	4.6	2.6 – 7.9
<b>Gender</b>				
Male	12.5	10.3 – 14.9	8.7	7.0 – 10.8
Female	5.3	4.0 – 6.9	3.5	2.4 – 4.9
<b>Age (years)</b>				
18-24	19.9	14.9 – 25.9	14.7	10.4 – 20.5
25-34	8.7	6.2 – 12.1	5.7	3.8 – 8.5
35-54	8.4	6.5 – 10.8	6.2	4.7 – 8.2
55 or older	4.3	3.1 – 6.1	2.1	1.2 – 3.4
<b>Race/Ethnicity</b>				
White	8.5	7.2 – 9.9	6.2	5.2 – 7.5
Black	10.1	5.4 – 18.0	4.0	1.5 – 10.1
Hispanic	15.5	7.3 – 29.9	8.6	3.2 – 21.3
Other <sup>3</sup>	5.9	2.6 – 12.8	2.5	1.0 – 6.2
<b>Marital Status</b>				
Single	17.7	13.5 – 23.0	11.0	7.8 – 15.3
Married/living as married	6.0	4.7 – 7.5	3.9	2.9 – 5.3
Widowed/divorced/separated	17.3	11.4 – 25.3	16.2	10.4 – 24.2
<b>Education</b>				
Less than high school	11.9	7.8 – 17.7	8.5	5.1 – 13.8
High school	8.3	6.2 – 11.0	5.1	3.6 – 7.1
Some college	10.1	7.7 – 13.1	7.1	5.1 – 9.9
College graduate or higher	6.7	5.0 – 9.0	5.0	3.5 – 7.1
<b>Student Status</b>				
In school	13.9	10.0 – 18.9	10.5	7.1 – 15.2
Not in school	7.9	6.6 – 9.3	5.2	4.2 – 6.5
<b>Current Employment</b>				
Full-time	9.8	8.1 – 11.8	7.1	5.7 – 8.8
Part-time	9.8	6.5 – 14.4	7.8	4.9 – 12.1
Unemployed <sup>4</sup>	17.1	8.2 – 32.3	12.4	4.9 – 28.1
Other <sup>5</sup>	5.7	3.9 – 8.3	2.7	1.6 – 4.6

Note: Unweighted numbers of respondents are shown in Table 3.1.

<sup>1</sup> For the past year, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month. For the past month, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period on 4 or more days.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimated percentage.

<sup>3</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

<sup>4</sup> Includes persons looking for work or not looking for work.

<sup>5</sup> Retired, disabled, homemaker, student, or "other."

Source: Missouri Household Telephone Survey: 2001/2002.

the effects that these statuses have on one's opportunities to engage in patterns of heavy drinking.

There were no statistically significant differences in heavy alcohol use among the various racial/ethnic groups, or by school status, or by current employment status.

*About 337,000 Missouri adults (or 8%) used illicit drugs in the past 12 months.*

## 5.2 Estimates of Illicit Drug Use

**Figure 5.2, Table 5.4, and Table 5.5** show the percentages and estimated numbers of Missouri adults who used different illicit drugs in the lifetime and in the year or month prior to the survey. An estimated 337,000 Missouri adult household residents (8%) used illicit drugs in the 12 months before the survey, and most of these were users of marijuana or hashish (7.4%). This finding is consistent with 2001 national-level data, which showed that marijuana was the most commonly used illicit drug (SAMHSA, 2002). Rate of methamphetamine use in the past year was 1.5%, and the prevalence rates for past year use of cocaine, hallucinogens, heroin, and inhalants was less than 1%.

*About 171,000 adults (or 4%) used illicit drugs in the past month.*

An estimated 171,000 residents (about 4%) used illicit drugs in the past month. This number is half of the estimated 337,000 residents who used illicit drugs in the past year. As a result, many of the Missouri adults who used illicit drugs in the past year most likely were not regular or frequent drug users. Like those who used illicit drugs in the past year, virtually all residents who used any illicit drugs in the past month were users of marijuana or hashish (3.7%). Rates of past month use of all other drugs were less than 1%.

**Table 5.6** presents estimates of prevalence of illicit drug use in the past year among various demographic groups. Users of illicit drugs in the past year were significantly more likely to be male, aged 18 to 24, unmarried, and in school. Similarly, males, adults aged 18 to 24, and unmarried adults also had some of the highest rates of past year illicit drug use in Missouri in 1997. Although rates of illicit drug use appeared to vary by race/ethnicity, education, and employment status, these differences were not significant.

Approximately 11% of men and 6% of women used illicit drugs in the 12 months prior to the 2001/2002 survey. About one in four adults between the ages of 18 and 24 used illicit drugs in the past year, twice the rate of 25- to 34-year-olds, four times the rate of 35- to 54-year-olds, and 25 times the rate for those 55 and older. Among Missouri's household population, approximately 23% of widowed, divorced, and separated persons used illicit drugs in the past year, and 19% of single adults used in the past year. These rates were four to five times as high as the corresponding rates for persons who were married or living as married.



**Table 5.3 Prevalence and Estimated Numbers of Past Year Heavy Alcohol Use and Illicit Drug Use in the Missouri Adult Household Population, by Service Area: 2001/2002**

Service Area	Heavy Alcohol Use <sup>1</sup>			Any Illicit Drug Use <sup>2</sup>		
	%	95% CI <sup>3</sup>	Number	%	95% CI <sup>3</sup>	Number
1	8.9	4.6 – 16.5	15,500	7.4	3.9 – 13.6	13,600
6	7.7	3.7 – 15.4	14,200	3.3	1.3 – 8.0	6,200
7	12.0	5.6 – 23.8	15,100	8.1	3.7 – 17.2	10,700
8	4.3	1.0 – 16.4	4,700	5.4	1.6 – 16.9	6,000
9	9.6	4.5 – 19.3	15,800	10.0	5.0 – 18.9	16,600
10	5.9	3.2 – 10.6	19,200	11.2	6.9 – 17.7	36,800
11	8.5	4.7 – 14.9	15,900	10.4	6.2 – 17.1	19,900
12	7.5	3.5 – 15.3	15,000	13.8	8.4 – 21.8	27,400
13	9.8	3.9 – 22.3	7,500	14.1	6.1 – 29.3	10,700
14	14.5	6.6 – 28.7	15,700	13.5	6.2 – 27.2	14,700
15	9.8	3.8 – 22.7	8,500	9.9	4.7 – 19.8	8,600
16	11.5	6.6 – 19.2	31,100	13.8	8.5 – 21.6	37,600
17	10.2	5.6 – 17.9	16,300	15.1	9.1 – 23.9	24,300
18	6.9	2.1 – 20.8	5,500	8.7	3.2 – 21.5	7,000
19	7.1	2.5 – 18.4	5,300	7.8	3.3 – 17.5	5,800
20	7.6	1.9 – 25.7	4,900	17.3	8.1 – 33.3	11,100
21	8.4	4.2 – 15.8	11,600	7.8	3.7 – 15.6	10,800
22	6.8	2.6 – 16.7	9,000	11.9	5.4 – 24.0	15,800
JC	8.8	5.6 – 13.7	39,000	14.3	9.8 – 20.4	63,300
SL	8.9	6.2 – 12.6	88,500	12.2	9.3 – 15.9	122,100

Note: See Figure 2.1 for Service Area locations.

<sup>1</sup> Defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month.

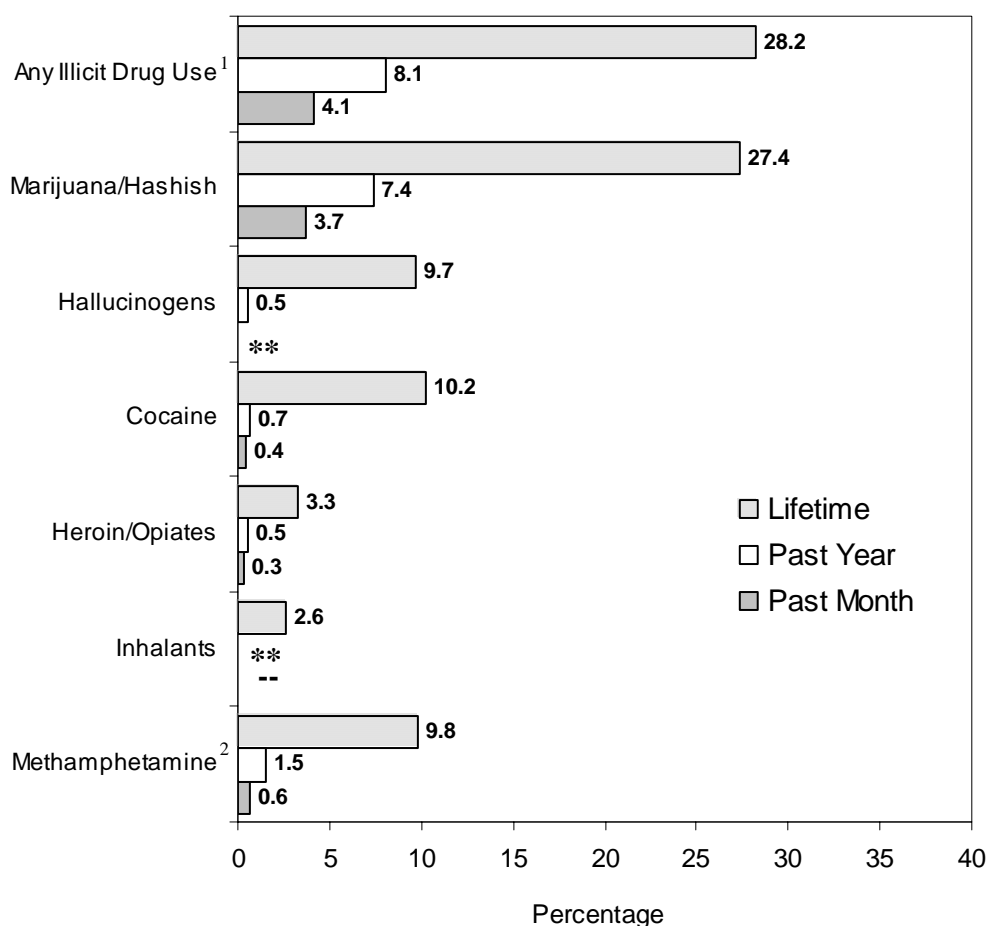
<sup>2</sup> Includes marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamine.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

The prevalence of illicit drug use other than marijuana in the Missouri household population was very low. However, the low estimates must be interpreted with caution because they likely underrepresent the actual users in Missouri. Individuals who participated in the survey were, by definition, members of established households with telephone service. Many individuals who have problems with drugs, especially cocaine or heroin, may spend a considerable amount of money on drugs. Therefore, they are often among the “invisible” in our society, without a stable residence or address because they do not have the money for it or because no one will trust them enough to take them into their household. Indeed, one study of drug use among household and nonhousehold populations in a single metropolitan area of the United States found that considerable numbers of crack cocaine users, heroin users, and injection

**Figure 5.2 Prevalence of Use of Illicit Drugs in the Lifetime, Past Year, and Past Month in the Missouri Adult Household Population: 2001/2002**



<sup>1</sup> Use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamine.

<sup>2</sup> Use of crank, crystal, or speed.

-- Not applicable.

\*\* Estimated percentage rounds to zero.

Source: Missouri Household Telephone Survey: 2001/2002.

drug users were in nonhousehold populations, such as homeless people and people who were incarcerated (NIDA, 1994).

Consequently, the household telephone survey estimates of illicit drug use among adults in Missouri may be conservative, particularly for less commonly used drugs, such as cocaine, heroin, and hallucinogens.

**Table 5.4 Estimated Numbers of Users of Illicit Drugs in the Lifetime, Past Year, and Past Month in the Missouri Adult Household Population, by Drug: 2001/2002**

Substance Used	Period of Use					
	Lifetime		Past Year		Past Month	
	Number (Thousands)	95% CI <sup>1</sup>	Number (Thousands)	95% CI <sup>1</sup>	Number (Thousands)	95% CI <sup>1</sup>
<b>Any Illicit Drug Use<sup>2</sup></b>	1,590	1,503 – 1,679	337	288 – 394	171	136 – 216
Marijuana/hashish	1,557	1,470 – 1,646	309	262 – 365	155	121 – 198
Hallucinogens	405	353 – 463	20	11 – 37	**	**
Cocaine	425	372 – 484	31	18 – 53	15	6 – 35
Heroin/opiates	137	108 – 173	22	11 – 41	12	5 – 30
Inhalants	110	84 – 143	**	**	---	---
Methamphetamines <sup>3</sup>	409	357 – 468	61	42 – 91	26	15 – 48

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated number of people.

<sup>2</sup> Use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines.

<sup>3</sup> Use of crank, crystal, or speed.

-- Not applicable.

\*\* Estimated number rounds to zero.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 5.5 Estimated Numbers of Users of Illicit Drugs in the Lifetime, Past Year, and Past Month in the Missouri Adult Household Population, by Region: 2001/2002**

Substance Used	Period of Use					
	Lifetime		Past Year		Past Month	
	Number (Thousands)	95% CI <sup>1</sup>	Number (Thousands)	95% CI <sup>1</sup>	Number (Thousands)	95% CI <sup>1</sup>
<b>Any Illicit Drug Use<sup>2</sup></b>	1,590	1,500 – 1,680	337	288 – 394	171	136 – 216
Central	167	142 – 196	43	29 – 63	20	11 – 34
Eastern	631	573 – 690	137	105 – 177	70	47 – 103
Northwest	414	371 – 459	79	56 – 109	45	28 – 69
Southeast	183	159 – 209	34	22 – 52	15	8 – 27
Southwest	194	164 – 227	45	28 – 69	23	12 – 44
<b>Any Illicit Drug Use Other than Marijuana/Hashish</b>	712	646 – 785	101	75 – 135	44	28 – 70
Central	71	54 – 94	24	14 – 42	6	2 – 17
Eastern	281	237 – 331	29	16 – 53	17	8 – 37
Northwest	187	155 – 224	16	8 – 31	5	2 – 12
Southeast	72	55 – 92	12	6 – 25	5	2 – 15
Southwest	101	78 – 130	19	8 – 41	12	4 – 32

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated number of people.

<sup>2</sup> Use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines.

<sup>3</sup> Use of hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamine.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 5.6 Prevalence of Illicit Drug Use in the Past Year in the Missouri Adult Household Population, by Selected Demographic Characteristics: 2001/2002**

Demographic Characteristic	Illicit Drug Use <sup>1</sup>	
	%	95% CI <sup>2</sup>
<b>Total Missouri</b>	8.1	6.9 – 9.5
<b>Region</b>		
Central	7.6	5.1 – 11.1
Eastern	9.3	7.1 – 12.0
Northwest	7.8	5.6 – 10.8
Southeast	6.8	4.4 – 10.3
Southwest	7.3	4.6 – 11.3
<b>Gender</b>		
Male	10.7	8.7 – 13.1
Female	5.7	4.5 – 7.2
<b>Age (years)</b>		
18–24	25.4	20.1 – 31.7
25–34	12.7	9.4 – 16.9
35–54	5.8	4.3 – 7.8
55 or older	1.0	0.5 – 2.1
<b>Race/Ethnicity</b>		
White	7.6	6.4 – 9.0
Black	11.6	6.9 – 18.9
Hispanic	10.6	4.4 – 23.5
Other <sup>3</sup>	8.1	3.9 – 16.1
<b>Marital Status</b>		
Single	18.5	14.3 – 23.6
Married/living as married	4.0	2.9 – 5.4
Widowed/divorced/separated	23.2	16.4 – 31.7
<b>Education</b>		
Less than high school	11.7	7.7 – 17.6
High school	8.5	6.4 – 11.0
Some college	9.5	7.2 – 12.3
College graduate or higher	5.1	3.5 – 7.4
<b>Student Status</b>		
In school	17.7	13.4 – 23.1
Not in school	6.6	5.4 – 7.9
<b>Current Employment</b>		
Full-time	9.1	7.4 – 11.2
Part-time	11.0	7.7 – 15.4
Unemployed <sup>4</sup>	13.2	6.6 – 24.6
Other <sup>5</sup>	4.8	3.2 – 7.0

Note: Unweighted numbers of respondents are shown in Table 3.1.

<sup>1</sup> Defined as use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimated percentage.

<sup>3</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

<sup>4</sup> Includes persons looking for work or not looking for work.

<sup>5</sup> Retired, disabled, homemaker, student, or “other.”

Source: Missouri Household Telephone Survey: 2001/2002.

### 5.3 Comparisons of Alcohol and Illicit Drug Use, by Sex and Other Characteristics

*Approximately 24% of men and 15% of women aged 18 to 24 were heavy alcohol users in the past year.*

*More than one-quarter of young men (28%) and almost one-quarter (23%) of young women aged 18 to 24 used illicit drugs in the past year.*

As noted earlier, men were more likely than women to use alcohol heavily and to use illicit drugs. However, these overall estimates for men and women might obscure important differences in rates of use among subgroups of men and women. Likewise, overall estimates might show large differences in rates of use, but differences among some subgroups of men and women might be less pronounced. Thus, to address this point, this section examines substance use among demographic subgroups of men and women.

**Table 5.7** presents past year heavy alcohol use and illicit drug use for men and women by various demographic characteristics. Young men and women aged 18 to 24 were by far the most likely to have engaged in heavy alcohol use (24% for men, 15% for women) or illicit drug use (28% for men, 23% for women) compared with those in other age groups.

Although men were consistently more likely than women to drink heavily and use illicit drugs, men and women were more alike in their illicit drug use patterns than in their patterns of heavy alcohol use. For example, the rate of heavy alcohol use among men aged 18 to 24 was 1.6 times the rate for women in this age group. In contrast, the rate of past year illicit drug use among 18- to 24-year-old men was only 1.2 times the corresponding rate for women in this age group.

Differences in substance use patterns by sex were most pronounced among those aged 55 and older, where men were nearly four times as likely as women to be heavy drinkers and five times as likely to use illicit drugs. Past year rates of illicit drug use were significantly lower among males and females aged 55 or older than among those aged 18 to 54. In addition, rates of heavy alcohol use and illicit drug use dropped off more rapidly for women than for men as age increased.

Men were about two times as likely as women to be heavy alcohol users across all marital status categories. Adults who were married or living as married were less likely to report heavy alcohol and illicit drug use than adults in the other marital categories. Eight percent of males and 4% of females who were married or living as married reported heavy alcohol use, compared with 24% of males and 10% of females who were single, 23% of males and 13% of females who were widowed, divorced, or separated. Approximately 5% of males and 3% of females who were married or living as married reported past year illicit drug use compared with 23% of males and 13% of females who were single, and 25% of females who were widowed, divorced, or separated.

School status was significantly related to heavy alcohol use among females and illicit drug use for both men and women. For example,

**Table 5.7 Past Year Substance Use in the Missouri Adult Household Population, by Gender and Demographic Groups: 2001/2002**

	Heavy Alcohol Use, Past Year <sup>1</sup>				Any Illicit Drugs, Past Year <sup>2</sup>			
	Male		Female		Male		Female	
	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>
<b>Age (Years)</b>								
18–24	24.4	17.0 – 33.7	15.3	9.4 – 24.0	27.9	19.8 – 37.7	23.0	16.5 – 31.0
25–34	12.7	8.4 – 18.7	4.6	2.4 – 8.5	19.6	13.8 – 27.1	5.8	3.3 – 9.8
35–54	12.0	8.7 – 16.3	4.9	3.1 – 7.6	6.9	4.6 – 10.2	4.7	3.1 – 7.2
55 or older	7.1	4.6 – 10.9	2.2	1.2 – 3.9	1.8	0.7 – 4.4	0.4	0.1 – 1.4
<b>Race/Ethnicity</b>								
White	12.2	10.1 – 14.7	5.0	3.8 – 6.6	9.4	7.5 – 11.8	6.0	4.7 – 7.7
Black	13.8	6.1 – 28.5	7.0	2.7 – 17.1	20.5	11.3 – 34.5	4.3	1.6 – 11.1
Hispanic	20.6	8.5 – 41.9	*	*	19.3	8.0 – 39.8	*	*
Other <sup>4</sup>	9.1	3.5 – 21.9	1.1	0.2 – 5.3	9.6	3.6 – 23.1	6.7	2.2 – 18.3
<b>Marital Status</b>								
Single	23.5	17.0 – 31.5	10.1	6.0 – 16.7	23.1	16.7 – 31.0	12.7	8.5 – 18.6
Married/living as married	8.0	6.0 – 10.6	3.9	2.6 – 5.8	5.2	3.5 – 7.6	2.8	1.8 – 4.4
Widowed/divorced/separated	22.9	13.7 – 35.7	12.8	6.1 – 24.7	25.2	15.0 – 39.1	21.6	13.3 – 33.1
<b>Education</b>								
Less than high school	17.7	10.8 – 27.8	7.1	3.3 – 14.8	15.6	8.9 – 25.9	8.5	4.4 – 15.8
High school	14.2	10.3 – 19.4	3.1	1.7 – 5.4	11.7	8.2 – 16.5	5.6	3.7 – 8.3
Some college	13.4	9.4 – 18.7	7.3	4.8 – 11.1	13.1	9.2 – 18.4	6.5	4.3 – 9.6
College graduate or higher	8.3	5.8 – 11.8	4.9	2.9 – 8.2	6.2	3.7 – 10.0	4.1	2.3 – 7.0
<b>Student Status</b>								
In school	15.6	10.1 – 23.4	11.8	7.3 – 18.6	20.0	13.6 – 28.3	15.0	9.9 – 22.1
Not in school	11.9	9.6 – 14.5	4.3	3.1 – 6.0	9.0	7.0 – 11.5	4.5	3.3 – 5.9
<b>Current Employment</b>								
Full-time	12.6	10.1 – 15.6	5.9	4.1 – 8.5	11.3	8.8 – 14.5	6.1	4.4 – 8.6
Part-time	14.0	8.0 – 23.5	7.7	4.3 – 13.4	13.9	7.6 – 24.1	9.5	6.1 – 14.4
Unemployed <sup>5</sup>	22.5	10.7 – 41.3	*	*	19.9	8.9 – 38.9	7.0	1.8 – 23.5
Other <sup>6</sup>	10.4	6.3 – 16.8	2.8	1.7 – 4.6	6.9	4.0 – 11.7	3.5	2.0 – 5.9

<sup>1</sup> Defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month.

<sup>2</sup> Defined as use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimated percentage.

<sup>4</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

<sup>5</sup> Includes persons looking for work or not looking for work.

<sup>6</sup> Retired, disabled, homemaker, student, or “other.”

\* Low precision; no estimate reported.

Source: Missouri Household Telephone Survey: 2001/2002.

20% of males in school reported any illicit drug use compared with 9% of those not in school.

## 5.4 Multiple Substance Use

Thus far, estimates of illicit drug use and heavy alcohol use have been presented and discussed separately. However, evaluating the prevalence of alcohol and illicit drug use separately can sometimes be misleading because individuals may use both alcohol and other drugs, sometimes in combination. The empirical literature on substance use indicates that those who use one illicit drug regularly are very likely to also use another drug or alcohol (e.g., Craddock et al., 1997).

Therefore, **Table 5.8** focuses on three categories of multiple substance use in the past year. Multiple substance use was categorized according to (a) heavy alcohol use in the past 12 months and use of at least one illicit drug in the same time period, (b) use of more than one illicit drug in the past 12 months, or (c) heavy alcohol use and use of more than one illicit drug in the past 12 months.

*About 2.5% of Missouri adults used alcohol heavily and used at least one illicit drug in the past year.*

*Adults 18 to 24 years old engaged in the use of alcohol heavily and at least one illicit drug at two to six times the rate of older adults, whereas men engaged in such behavior at up to three times the rate of women.*

As shown in **Table 5.8**, an estimated 2.5% of adults in the Missouri household population used alcohol heavily and used at least one illicit drug in the past year, making this the most common multiple substance use category in this population. Because most adults who used illicit drugs used marijuana, the most prevalent combination of multiple substance use was likely to be marijuana and heavy alcohol use. However, these users of multiple substances may not necessarily have used these substances within a few hours of each other. Polydrug use was less common, with 1.8% of Missouri adults reporting use of two or more illicit drugs in the past year. These rates are comparable to those reported in 1997.

Although there was little difference in multiple substance use by region, young adults 18 to 24 engaged in multiple substance use at about two to six times the rate of adults 25 to 34 years old. The rate of heavy alcohol use and use of at least one illicit drug among adults aged 18 to 24 was nearly 13 times the rate for adults aged 55 and older. Approximately 8% of adults aged 18 to 24 used more than one illicit drug compared with 3% of adults 25 to 34 and less than 1% of adults 35 to 54. Men engaged in multiple substance use at about one and one-half to three times the rate of women. Men were significantly more likely than women to use alcohol heavily and to use at least one illicit drug. Specifically, 3.8% of men and 1.3% of women drank heavily and used at least one illicit drug in the year before the 2001/2002 survey.

## 5.5 State and National Comparisons of Substance Use

To provide a broader perspective on the rates of substance use among Missouri adults, a comparison was made of Missouri adults' substance

**Table 5.8 Prevalence of Multiple Substance Use in the Past Year in the Missouri Adult Household Population, by Selected Demographic Characteristics: 2001/2002**

Demographic Characteristic	Multiple Substance Use					
	Heavy Alcohol and at Least One Drug <sup>1</sup>		More than One Drug <sup>2</sup>		Heavy Alcohol and More than One Drug <sup>3</sup>	
	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>
<b>Total Missouri</b>	2.5	1.9 – 3.4	1.8	1.3 – 2.5	0.7	0.4 – 1.2
<b>Region</b>						
Central	2.9	1.3 – 6.1	2.4	1.3 – 4.4	0.6	0.2 – 1.8
Eastern	2.6	1.6 – 4.4	1.9	1.0 – 3.5	0.7	0.2 – 1.9
Northwest	2.1	1.1 – 3.9	1.1	0.5 – 2.5	0.7	0.2 – 2.0
Southeast	2.6	1.2 – 5.6	1.5	0.6 – 3.6	0.2	0.0 – 1.2
Southwest	2.6	1.2 – 5.6	2.4	1.0 – 5.7	1.2	0.4 – 3.7
<b>Age (Years)</b>						
18–24	9.5	6.3 – 14.1	8.0	5.1 – 12.2	3.8	2.0 – 7.2
25–34	3.0	1.5 – 5.8	3.0	1.5 – 5.8	0.6	0.1 – 2.2
35–54	1.5	0.7 – 2.8	0.6	0.2 – 1.5	0.2	0.0 – 1.2
55 or older	0.6	0.2 – 1.8	*	*	**	**
<b>Gender</b>						
Male	3.8	2.7 – 5.5	2.1	1.3 – 3.4	0.9	0.5 – 1.8
Female	1.3	0.8 – 2.2	1.5	0.9 – 2.5	0.5	0.2 – 1.2
<b>Race/Ethnicity</b>						
White	2.5	1.8 – 3.5	1.8	1.3 – 2.6	0.8	0.4 – 1.4
Black	2.2	0.7 – 6.6	1.9	0.5 – 7.4	**	**
Hispanic	6.1	1.9 – 17.8	1.8	0.3 – 11.2	1.8	0.3 – 11.5
Other <sup>5</sup>	1.9	0.3 – 12.2	0.8	0.2 – 3.2	**	**

Note: Unweighted numbers of respondents are shown in Table 3.1.

<sup>1</sup> Weekly consumption of five or more drinks in a 24-hour period for men or four or more drinks in a 24-hour period for women, and use of marijuana, hallucinogens, cocaine, heroin/opiates, inhalants, or methamphetamines in the past 12 months (but not necessarily in combination with alcohol).

<sup>2</sup> Using two or more of the following drugs at any time in the past 12 months: marijuana, hallucinogens, cocaine, heroin/opiates, inhalants, or methamphetamines.

<sup>3</sup> Heavy alcohol in past 12 months (as defined in footnote 1) and use of two or more illicit drugs in the past 12 months (as defined in footnote 2).

<sup>4</sup> The 95% CI = 95% confidence interval for the estimated number of people.

<sup>5</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

\* Low precision; no estimate reported.

\*\* Estimated percentage rounds to zero.

Source: Missouri Household Telephone Survey: 2001/2002.



use in 2001/2002 with data collected in Missouri in 1997 and nationally through the 2001 NHSDA (SAMHSA, 2002).<sup>1</sup> Comparison of findings with the 1997 Missouri household survey and the NHSDA provides a reasonable benchmark for assessing the validity of the 2001/2002 Missouri survey. There is, however, the potential for interview mode to influence self-report data, which may affect the comparison of the Missouri surveys, which use a telephone method of collection, and the NHSDA, which used face-to-face interviewing and allowed for the more sensitive questions about drug use to be self-administered.

**Figure 5.3** compares prevalence estimates from the 1997 Missouri Household Telephone Survey and national estimates from the 2001 NHSDA to the 2001/2002 Missouri Household Telephone Survey. As expected, estimates of past year use for Missouri in 2001/2002 are slightly higher than estimates for 1997 for alcohol, heavy alcohol, any illicit drug, any core illicit drug, marijuana/hashish, and heroin/opiate use. The only declines in use were for hallucinogens (0.8 vs. 0.5, respectively) and cocaine (1.2 vs. 0.7, respectively).

The increase in past year heroin use from 1997 to 2001/2002 is particularly striking. In 1997, the past year rate of heroin use was 0.1% compared with 0.5% in 2001/2002. Past month use in 1997 was undetectable, but in 2001/2002 it was 0.3% (not shown), indicating that many past year heroin users in 2001/2002 were current, or past month users. According to NIDA's Community Epidemiology Work Group (CEWG), St. Louis is a destination market for heroin.

*Rates of substance use among Missouri adults in 2001/2002 were generally higher than rates in 1997, with the exception of hallucinogens and cocaine.*

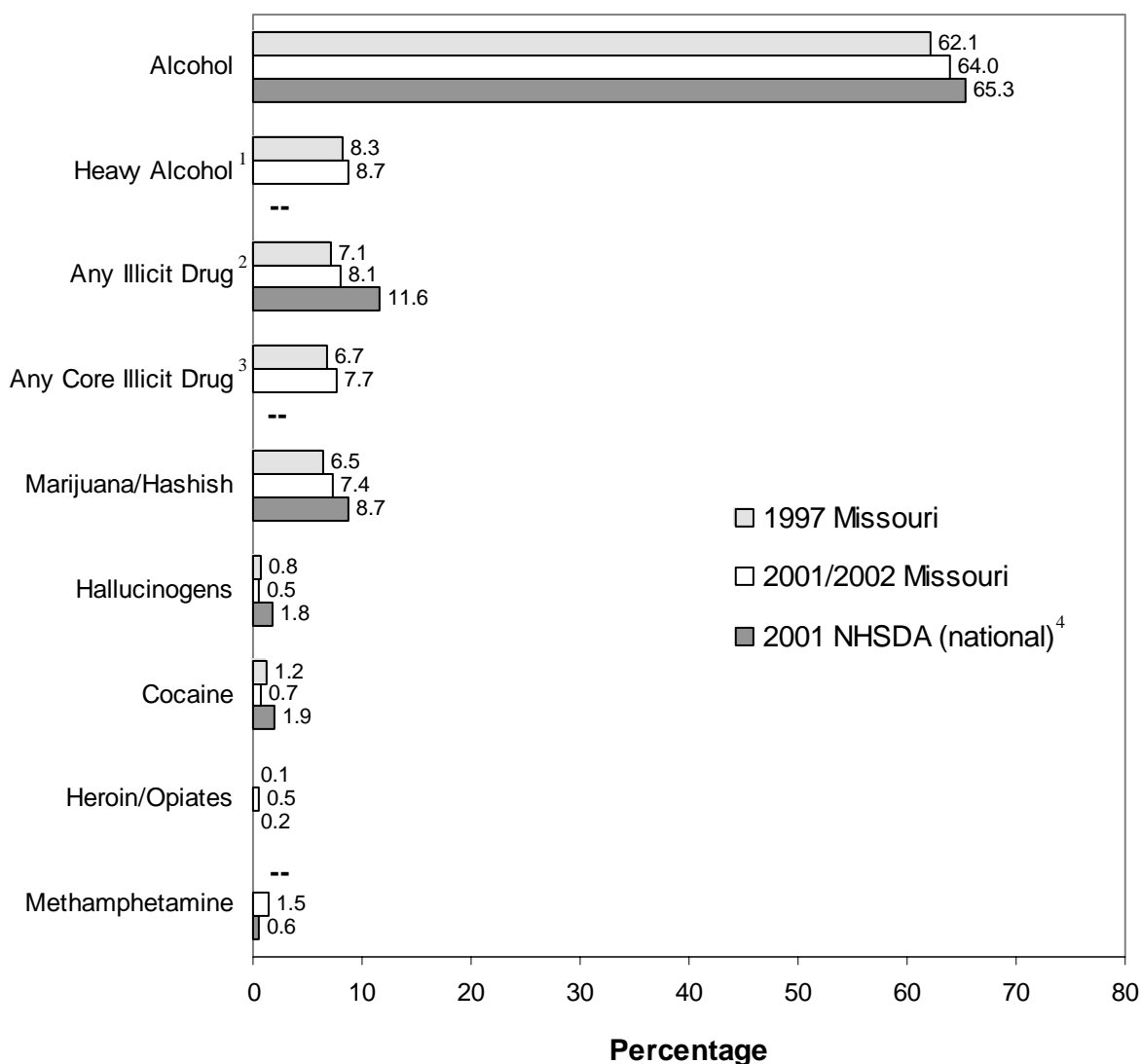
In contrast, substance use rates in Missouri in 2001/2002 tended to be lower than rates nationally in 2001. However, methamphetamine use was more than twice the rate in Missouri in 2001/2002 than nationally in 2001, and heroin use was slightly higher (0.5 % vs. 0.2%, respectively). These findings suggest that rates from the 2001/2002 Missouri Household Telephone Survey are comparable to rates nationally. However, the 2001/2002 state survey and the 2001 NHSDA utilized different data collection methodologies, which could affect the comparison.

*Adult methamphetamine use in the past year for Missouri in 2001/2002 was noticeably higher than 2000 national estimates.*

Gfroerer and Hughes (1992) reported that a telephone survey on drug use conducted in 1988 produced significantly lower estimates of marijuana and cocaine use for both lifetime and past year periods than did the 1988 NHSDA, even after estimates for the latter were adjusted to take into account differences in editing and weighting between the two surveys. Further, these estimates were significantly lower for the telephone survey across most demographic groups, suggesting that the lower estimates in the telephone survey were due in part to underreporting of drug use. Gfroerer and Hughes also found that

<sup>1</sup> The NHSDA collected data nationally from more than 69,000 respondents aged 12 or older in 2001, including nearly 46,000 respondents aged 18 or older (nearly 760 of whom resided in Missouri).

**Figure 5.3 State and National Comparisons of Past Year Alcohol and Illicit Drug Use in the Missouri Adult Household Population**



<sup>1</sup> For the past year, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month.

<sup>2</sup> For 1997 survey, includes marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, and nonmedical use of stimulants. For 2001/2002 survey, includes marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamine.

<sup>3</sup> Any core illicit drug includes marijuana or hashish, hallucinogens, cocaine, and heroin/opiates.

<sup>4</sup> National estimates from the 2001 National Household Survey on Drug Abuse.

-- Not available.

Source: Missouri Household Telephone Survey: 1997; Missouri Household Telephone Survey: 2001/2002; and National Household Survey on Drug Abuse: 2001.

prevalence estimates of marijuana and cocaine use for lifetime and past year periods were significantly higher for households in the 1988 NHSDA that did not have telephones. Given that telephone surveys (including the 2001/2002 Missouri Household Telephone Survey) do not cover households without telephones, this latter finding suggests that a telephone survey methodology might produce lower drug use prevalence estimates compared with face-to-face interviews even though it is estimated that 95% of the population has a working telephone in the home. However, this is most likely to be a problem for lower income households that cannot afford a telephone and who are eligible for publicly funded services.

Indeed, findings from **Figure 5.3** appear to confirm that the telephone survey methodology in Missouri yielded estimates of substance use—and particularly estimates of use of drugs other than alcohol—that were slightly lower than national estimates based on a face-to-face interview methodology. However, the Missouri Household Telephone Survey yielded some estimates of substance use (e.g., methamphetamine and heroin use) that were *higher* than the estimates that were based on face-to-face interviews.

In addition, the findings from **Figure 5.3** do not completely rule out the possibility of underreporting of drug use in the Missouri Household Telephone Survey, because some underreporting of drug use also may have taken place in the NHSDA. Nevertheless, even if some telephone survey respondents who used particular illicit drugs in the year prior to the 2001/2002 survey reported lifetime (but not past year) use or denied lifetime use altogether, the estimates in this chapter as a whole—and particularly in **Figure 5.3**—indicate that sizable numbers of Missouri Household Telephone Survey respondents *were* willing to report illicit drug use in the past year.

## 5.6 Use and Abuse of Prescription Drugs

This section presents data on Missouri residents' medical and nonmedical use of prescription drugs in the lifetime, past year, and past month. Respondents were asked about their use of sedatives, tranquilizers, stimulants, prescription opiates/pain killers, antidepressants, and "nerve pills."

### 5.6.1 Medical Use of Prescription Drugs

To measure the legitimate use of prescription drugs, respondents were asked if they had ever been prescribed any of the prescription medicines listed in **Table 5.9**. Those respondents who said yes were asked when they were last prescribed these medications.

Two-thirds (68%) of Missouri adults reported having ever been prescribed a prescription drug, 42% reported being prescribed a

*Five percent of respondents reported past year nonmedical prescription drug use, and 3% reported such use in the past month. Pain killers were the most commonly reported type of prescription used.*

**Table 5.9 Prevalence of Medical Use of Prescription Drugs in the Missouri Adult Household Population: 2001/2002**

	Lifetime		Past Year		Past Month	
	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>
<b>Any Prescription Drug</b>	67.6	65.5 – 69.6	41.9	39.8 – 44.0	22.0	20.4 – 23.8
Sedatives	12.2	10.9 – 13.6	4.9	4.1 – 5.8	2.0	1.6 – 2.6
Tranquilizers	10.9	9.7 – 12.1	3.8	3.1 – 4.6	1.9	1.4 – 2.5
Stimulants	2.2	1.7 – 2.9	0.6	0.3 – 1.0	0.2	0.1 – 0.4
Opiates/pain killers	47.6	45.5 – 49.8	21.2	19.5 – 23.0	6.5	5.6 – 7.6
Antidepressants	20.3	18.7 – 22.1	11.4	10.1 – 12.8	7.0	6.0 – 8.1
“Nerve pills”	9.3	8.2 – 10.5	4.4	3.6 – 5.4	2.6	2.0 – 3.4

Note: Medical use is defined as prescribed use.

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

medication in the past year, and 22% had a prescription in the past month. The most frequently reported type of prescription was pain killers in the lifetime (48%) and past year (21%). Antidepressants were the most frequently prescribed drug in the past month (7%).

### 5.6.2 Nonmedical Use of Prescription Drugs

To measure the nonmedical use of prescription drugs, respondents were asked if they had used prescribed medicines in ways other than prescribed, in larger amounts than prescribed, or more often than the doctor ordered. They were also asked if they had used any of these drugs without a doctor’s prescription.

According to **Table 5.10**, 10% of adults had ever used medicine for nonmedical reasons. An estimated 5% did so in the past year, as did 3% in the past month. Pain killers were the most commonly reported type of prescription drug that was used nonmedically, with 6% of respondents reporting nonmedical use of pain killers in the lifetime, 3% in the past year, and 1.5% in the past month.

*Nonmedical prescription drug use was more likely among younger adults, adults who were widowed, divorced, or separated, and those in school.*

### 5.6.3 Prescription Drug Use and Abuse by Demographic Characteristics

Patterns of prescription drug use varied greatly across demographic categories (see **Table 5.11**). The medical use of any prescription in the past year was significantly higher among females than males. However, males and females reported similar rates of nonmedical use. The medical use of prescription medicines increased with age, with 46% of those 55 or older reporting medical use compared with 35% of those

**Table 5.10 Prevalence of Nonmedical Use of Prescription Drugs in the Missouri Adult Household Population: 2001/2002**

	Lifetime		Past Year		Past Month	
	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>
<b>Any Prescription Drug</b>	9.6	8.4 – 11.0	4.9	4.0 – 5.9	2.6	2.0 – 3.4
Sedatives	2.0	1.5 – 2.8	0.9	0.6 – 1.4	0.4	0.2 – 0.8
Tranquilizers	1.6	1.1 – 2.3	0.6	0.3 – 1.1	0.3	0.1 – 0.7
Stimulants	2.5	1.9 – 3.2	0.5	0.3 – 0.9	0.2	0.1 – 0.4
Opiates/pain killers	5.9	4.9 – 7.0	2.9	2.2 – 3.7	1.5	1.1 – 2.2
Antidepressants	1.1	0.7 – 1.6	0.5	0.2 – 0.9	0.2	0.1 – 0.6
“Nerve pills”	1.0	0.7 – 1.6	0.5	0.2 – 0.9	0.2	0.1 – 0.6

Note: Nonmedical use is defined as use for reasons other than prescribed, in larger amounts than prescribed, more often than prescribed, or without a prescription.

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

aged 18 to 24. Conversely, nonmedical use was significantly higher among the youngest age group than among the older age groups (11% of 18- to 24-year-olds versus 4% of adults 55 or older).

Adults who were widowed, divorced, or separated were nearly twice as likely as singles, and three times as likely as married adults, to report nonmedical prescription drug use. Respondents who were not in school reported higher rates of medical use and those in school reported higher nonmedical rates. However, it is important to remember that school status is likely to be highly correlated with age.

The differences by race/ethnicity employment status, education level, and student status were not significant.

## 5.7 Summary

Nearly two-thirds of adult household residents in Missouri (64%) used alcohol at least once in the 12 months before the survey, and nearly half (47%) used alcohol in the month preceding the survey. In addition, about 360,000 adult residents of Missouri households (about 9%) used alcohol heavily in the previous 12 months, and 248,000 adults (about 6%) drank heavily in the month prior to the 2001/2002 survey. Some of the highest rates of heavy alcohol use in the past year were observed for men (13%), adults between the ages of 18 and 24 (20%), and single (i.e., never married) adults (18%).

Approximately 8% of adults, or about 337,000 persons, used one or more illicit drugs in the 12 months before the survey, with 4% (171,000

**Table 5.11 Prevalence of Any Prescription Drug Use in the Past Year in the Missouri Adult Household Population, by Selected Demographic Characteristics: 2001/2002**

Demographic Characteristic	Medical Use <sup>1</sup>		Nonmedical Use <sup>2</sup>	
	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>
<b>Total Missouri</b>	41.9	39.8 – 44.0	4.9	4.0 – 5.9
<b>Region</b>				
Central	40.8	36.0 – 45.9	7.0	4.5 – 10.8
Eastern	42.2	38.2 – 46.2	4.6	3.2 – 6.6
Northwest	41.7	37.5 – 46.0	3.8	2.5 – 5.9
Southeast	42.8	37.9 – 47.9	5.3	3.4 – 8.2
Southwest	41.8	36.5 – 47.2	4.8	2.9 – 7.9
<b>Gender</b>				
Male	38.2	35.0 – 41.5	4.8	3.5 – 6.5
Female	45.3	42.5 – 48.0	5.0	3.9 – 6.3
<b>Age (years)</b>				
18–24	34.7	28.7 – 41.1	11.2	7.6 – 16.2
25–34	34.1	29.5 – 39.0	4.4	2.7 – 7.0
35–54	44.4	40.9 – 48.0	3.9	2.8 – 5.5
55 or older	46.3	42.9 – 49.8	3.7	2.6 – 5.3
<b>Race/Ethnicity</b>				
White	42.7	40.5 – 44.9	5.0	4.1 – 6.2
Black	36.6	28.7 – 45.3	3.7	1.6 – 8.1
Hispanic	41.5	26.8 – 58.0	1.9	0.3 – 10.4
Other <sup>4</sup>	37.4	27.9 – 47.8	6.4	2.6 – 15.2
<b>Marital Status</b>				
Single	35.4	30.2 – 40.9	6.6	4.2 – 10.2
Married/living as married	41.1	38.4 – 43.9	3.7	2.8 – 4.9
Widowed/divorced/separated	50.0	41.1 – 58.9	12.2	7.2 – 19.7
<b>Education</b>				
Less than high school	44.3	38.1 – 50.7	6.5	3.9 – 10.6
High school	43.0	39.3 – 46.8	6.8	5.0 – 9.1
Some college	42.2	38.1 – 46.3	4.3	3.0 – 6.1
College graduate or higher	39.4	35.6 – 43.4	2.8	1.8 – 4.3
<b>Student Status</b>				
In school	34.3	28.7 – 40.4	7.2	4.4 – 11.5
Not in school	43.1	40.8 – 45.4	4.5	3.7 – 5.6
<b>Current Employment</b>				
Full-time	37.7	34.8 – 40.7	4.0	3.0 – 5.4
Part-time	40.5	34.8 – 46.6	8.2	5.4 – 12.4
Unemployed <sup>5</sup>	45.9	32.9 – 59.5	1.9	0.3 – 10.7
Other <sup>6</sup>	49.3	45.7 – 53.0	5.1	3.6 – 7.2

Note: Unweighted numbers of respondents are shown in Table 3.1.

<sup>1</sup> Medical use is defined as use as prescribed.

<sup>2</sup> Nonmedical use is defined as use for reasons other than prescribed, in larger amounts than prescribed, more often than prescribed, or without a prescription.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimated percentage.

<sup>4</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

<sup>5</sup> Includes persons looking for work or not looking for work.

<sup>6</sup> Retired, disabled, homemaker, student, or “other.”

Source: Missouri Household Telephone Survey: 2001/2002.

adults) reporting past month illicit drug use. Almost all persons reporting illicit drug use reported use of marijuana. As was the case with heavy alcohol use, rates of illicit drug use in the past year were higher among men and adults between the ages of 18 and 24. In addition, adults who were widowed, divorced, or separated were also more likely to report illicit drug use in the past year.

About 24% of men aged 18 to 24 and 15% of women in this age group were heavy alcohol users in the past year, compared with 13% of all adult men and 5% of all adult women in Missouri. Although the prevalence of past year heavy alcohol use among young women aged 18 to 24 was higher than the rates for women in the other age groups, the rate for young women was noticeably less than the rate for young men aged 18 to 24. Differences in rates of heavy alcohol use by sex were most pronounced among those 55 and older, where men were about three times as likely as women in this age group to be heavy drinkers.

Young men and young women aged 18 to 24 also had high rates of illicit drug use in the past year (28% of men and 23% of women in this age group). Although men aged 18 to 24 had a somewhat higher rate of illicit drug use in the past year compared with the rate for women in this age group, this sex difference was not as pronounced as the difference in rates of heavy alcohol use among young adult men and women.

Approximately 3% of Missouri adults reported both heavy alcohol use and use of at least one illicit drug, and 2% reported use of more than one drug. Approximately 10% of 18- to 24-year-olds and 4% of males reported heavy alcohol use and use of at least one illicit drug. Rates of polydrug use were also highest among the youngest age group (8%) and males (2%).

Missouri adults in 2001/2002 had rates of substance use that were generally lower than corresponding national rates from the 2001 NHSDA. A notable exception was for methamphetamine use, which was about three times as high in Missouri as in the nation as a whole. Most rates from the current survey were slightly higher than those from the 1997 Missouri Household Telephone Survey.

Nearly half (42%) of Missouri adults reported having been prescribed a prescription drug in the past year; most of these reported being prescribed pain killers. Significantly fewer adults reported the nonmedical use of prescriptions (5%) in the past year. Patterns of medical and nonmedical prescription drug use across demographic categories varied considerably, with medical use being higher among females, older adults, and those not in school. Nonmedical use was more common among younger adults, adults who were widowed, divorced, or separated, and those in school.

Overall, the data presented in this chapter provide basic prevalence information about alcohol and illicit drug use for the Missouri adult household population and offer insights into the groups most likely to experience substance use problems. These data also provide the foundation for examining the need for treatment for alcohol and other drug use problems among adults, described in Chapter 6 of this report.



## 6. Need for Substance Abuse Treatment Among Adults

This chapter builds on the substance use information presented in Chapter 5 and addresses three key questions related to the need for substance abuse treatment services:

- # What problems have Missouri adults experienced due to their use of alcohol or other drugs?
- # What are the percentages and numbers of the Missouri adult household population considered in need of treatment or intervention for their abuse of alcohol or other drugs?
- # What percentage and number of individuals who are in need of treatment are also eligible for publicly funded treatment services?

In this chapter, we present findings related to the problems associated with alcohol or illicit drug use among Missouri adults, the overall prevalence of treatment or intervention need, and need for treatment or intervention among different demographic subgroups. Additional findings are presented on insurance coverage and benefits for those in need of treatment, prior treatment that Missouri adults have received, the demand for treatment services, and the distribution of levels of services need by Missouri adults.

### 6.1 Prevalence of Problems Associated with Alcohol or Illicit Drug Use

As noted in Sections 2.4.4 to 2.4.8, the Missouri Household Telephone Survey questionnaire included questions to identify symptoms of dependence and abuse for alcohol and other drugs, based on the DSM-IV criteria. This section presents findings on the prevalence of problems related to substance dependence or abuse among adults in the Missouri household population in 2001/2002.

#### 6.1.1 Specific Problems Associated with Alcohol or Illicit Drug Use

**Table 6.1** shows the percentages of adults in the Missouri household population who had specific problems associated with their use of alcohol or illicit drugs. These problems correspond to the symptoms of dependence or abuse that were described in Section 2.4.4. Findings are presented for the occurrence of these problems in the 12 months prior to the 2001/2002 survey. If a person had a given problem, however, that does not necessarily mean that this person would meet diagnostic

*Problems associated with alcohol use were more prevalent among Missouri adults than were problems associated with illicit drug use. However, Missouri adults were more likely to have used alcohol than illicit drugs.*

**Table 6.1 Percentages Reporting Substance Use Problems in the Past Year in the Missouri Adult Household Population: 2001/2002**

Substance Use Problem <sup>1</sup>	Alcohol		Any Illicit Drug <sup>2</sup>		Alcohol or Any Illicit Drug	
	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>
Developed tolerance	3.9	3.0 – 5.0	1.4	1.0 – 2.1	5.0	4.0 – 6.3
Withdrawal	1.6	1.1 – 2.3	0.4	0.2 – 0.7	1.9	1.4 – 2.7
Used in larger amounts or over a longer period than intended	6.4	5.4 – 7.7	1.2	0.7 – 1.9	7.3	6.2 – 8.6
Persistent desire or unsuccessful efforts to cut down or control use	2.3	1.7 – 3.1	0.3	0.1 – 0.6	2.6	2.0 – 3.4
Great deal of time spent getting/using/getting over effects	1.2	0.8 – 1.8	1.4	0.9 – 2.1	2.4	1.8 – 3.3
Gave up/reduced important social, occupational, or recreational activities	0.6	0.3 – 1.0	0.3	0.1 – 0.8	0.9	0.5 – 1.4
Continued use despite physical or psychological problem	1.7	1.3 – 2.3	1.0	0.6 – 1.5	2.4	1.8 – 3.2
Use resulting in failure to fulfill major obligations at work, school, or home	1.7	1.2 – 2.4	1.0	0.6 – 1.7	2.5	1.9 – 3.4
Recurrent use in physically hazardous situations	9.9	8.6 – 11.3	2.3	1.6 – 3.1	11.3	9.9 – 12.8
Recurrent substance-related legal problems	0.4	0.2 – 0.8	1.7	1.2 – 2.4	2.1	1.5 – 2.9
Continued use despite social or interpersonal problems caused or escalated by use	1.4	1.0 – 2.0	0.4	0.2 – 0.9	1.7	1.2 – 2.3

<sup>1</sup> Individuals may report more than one type of substance use problem.

<sup>2</sup> Use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, methamphetamine, or nonmedical use of any psychotherapeutic.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

criteria for dependence or abuse. Nevertheless, information on the prevalence of these problems provides some indication of the extent of risk for problems that would require substance abuse treatment. Information about specific problems also indicates which problems may be contributing most to the occurrence of dependence or abuse.

As shown in **Table 6.1**, rates of problems associated with alcohol use were greater than the corresponding rates for the use of illicit drugs and thus dominate estimates of the rates of problems due to either category. In particular, nearly 90% of adults in the Missouri household population had used alcohol at least once in their lifetime, compared with about 28% who had ever used illicit drugs (see **Figures 5.1** and **5.2**).

Highlights from **Table 6.1** include the following:

- # More than 11% of the Missouri adult household population had recently used alcohol or illicit drugs in physically hazardous situations. About 7% used alcohol or illicit drugs in larger amounts or over a longer period than intended.
- # Recurrent use in physically hazardous situations was the most commonly occurring problem in the past year for use of alcohol (10%). Other more frequently occurring problems included use in larger amounts or over a longer period of time than intended (6%) and development of tolerance (4%).

### 6.1.2 Dependence or Abuse

**Figure 6.1** shows the percentages of Missouri household adults whose problems related to substance use were sufficiently serious for the adults to be classified as being dependent or abusing alcohol and illicit drugs based on DSM-IV symptoms. In addition, **Table 6.2** shows the estimated numbers of adults who met past year criteria for dependence or abuse. The estimates in **Table 6.2** are rounded to the nearest hundred people.

Highlights from **Figure 6.1** and **Table 6.2** include the following:

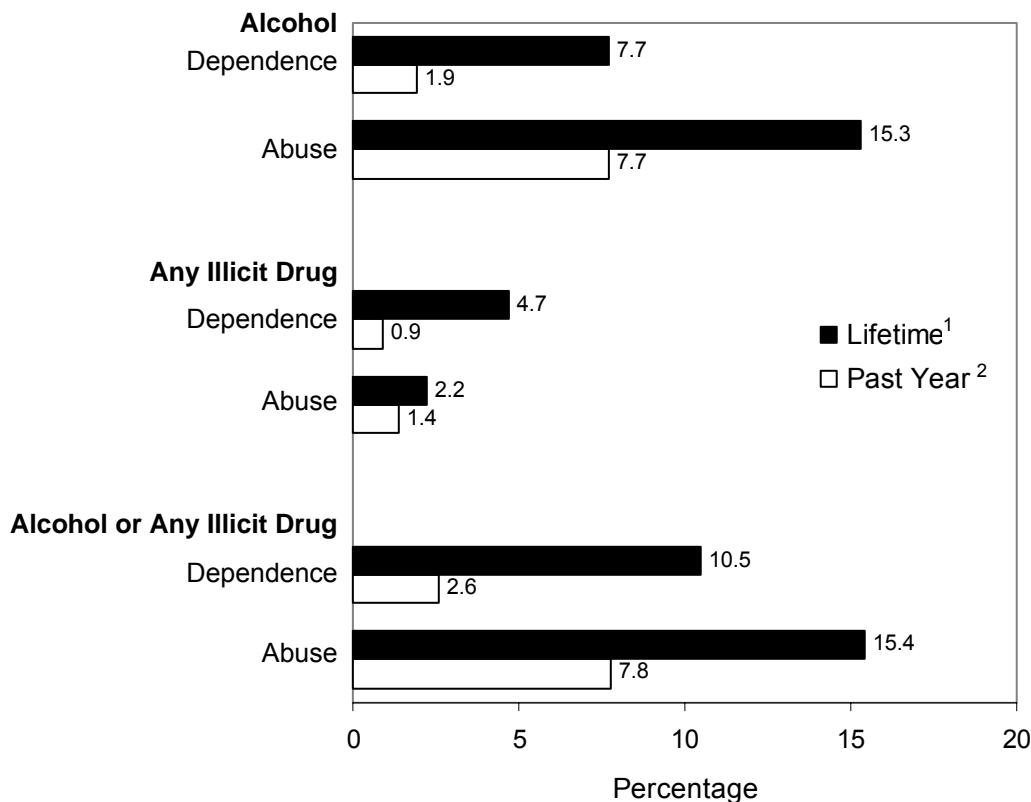
- # An estimated 8% of adults in the Missouri household population were classified as meeting lifetime DSM-IV criteria for alcohol dependence. An estimated 15% met lifetime criteria for alcohol abuse. Altogether, then, an estimated 23% of household adults were classified as meeting lifetime criteria for either alcohol dependence or abuse.<sup>1</sup>

*About 23% of adults in the household population met lifetime criteria for alcohol dependence or abuse.*

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<sup>1</sup>The estimated percentages of people meeting lifetime DSM-IV criteria for alcohol dependence or abuse can be added together because these categories are mutually exclusive. That is, people who met lifetime criteria for alcohol abuse by definition did not meet lifetime criteria for dependence.

**Figure 6.1 Prevalence of Dependence or Abuse in the Lifetime and Past Year in the Missouri Adult Household Population: 2001/2002**



<sup>1</sup> Lifetime dependence based on *DSM-IV* (1994) criteria included adults who experienced three or more symptoms of dependence on a given drug in the lifetime. Some of these symptoms persisted for a month or more, or occurred repeatedly over a longer period of time. Lifetime abuse based on *DSM-IV* (1994) criteria included adults who never had a lifetime diagnosis of dependence on a given drug but reported 1 or more symptoms of abuse in the lifetime. Some of these symptoms persisted for a month or more, or occurred repeatedly over a longer period of time.

<sup>2</sup> Past year dependence based on *DSM-IV* (1994) criteria included adults who experienced three or more symptoms of dependence on a given drug in the past 12 months. Past year abuse based on *DSM-IV* (1994) criteria included adults who never had a past year diagnosis of dependence but reported 1 or more symptoms of abuse in the past 12 months.

Source: Missouri Household Telephone Survey: 2001/2002.

*More than 397,000 Missouri adults had current alcohol dependence or abuse. About 96,000 adults had current illicit drug dependence or abuse.*

# An estimated 2% of adults in the household population were defined as having past year alcohol dependence (i.e., past 12 months), and 8% of adults in the household population were defined as past year alcohol abusers. Altogether, more than 397,000 adults in the Missouri household population had current alcohol dependence (77,400) or abuse (319,700).

# An estimated 1% of the adult household population, or about 38,000 adults, had past year illicit drug dependence, and 1.4% had past year abuse (58,100 adults). Together, approximately 96,000 adults had current illicit drug use dependence or abuse.

**Table 6.2 Prevalence of Dependence and Abuse in the Past Year in the Missouri Adult Household Population, by Drug: 2001/2002**

Drug	Problem					
	Dependence <sup>1</sup>			Abuse <sup>2</sup>		
	%	Number <sup>3</sup>	95% CI <sup>4</sup>	%	Number <sup>3</sup>	95% CI <sup>4</sup>
Alcohol	1.9	77,400	55,800 – 107,100	7.7	319,700	272,800 – 373,900
Any Illicit Drug <sup>5</sup>	0.9	37,900	22,400 – 63,900	1.4	58,100	39,200 – 86,000
Alcohol or Any Illicit Drug	2.6	106,900	80,100 – 142,500	7.8	324,200	276,700 – 379,100

\*\*Estimate rounds to fewer than 100 people.

<sup>1</sup> Met *DSM-IV* (1994) criteria for dependence on a given drug. See Chapter 2 for details on how dependence was defined.

<sup>2</sup> Met *DSM-IV* (1994) criteria for abuse of a given drug. See Chapter 2 for details on how abuse was defined.

<sup>3</sup> Estimated number of people rounded to the nearest hundred.

<sup>4</sup> The 95% CI = 95% confidence interval of the estimated number of people.

<sup>5</sup> Use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, methamphetamine, or nonmedical use of any psychotherapeutic.

Source: Missouri Household Telephone Survey: 2001/2002.

# For alcohol or any illicit drug, about 3% of adults had past year dependence (107,000 adults), and 8% had abuse (324,000).

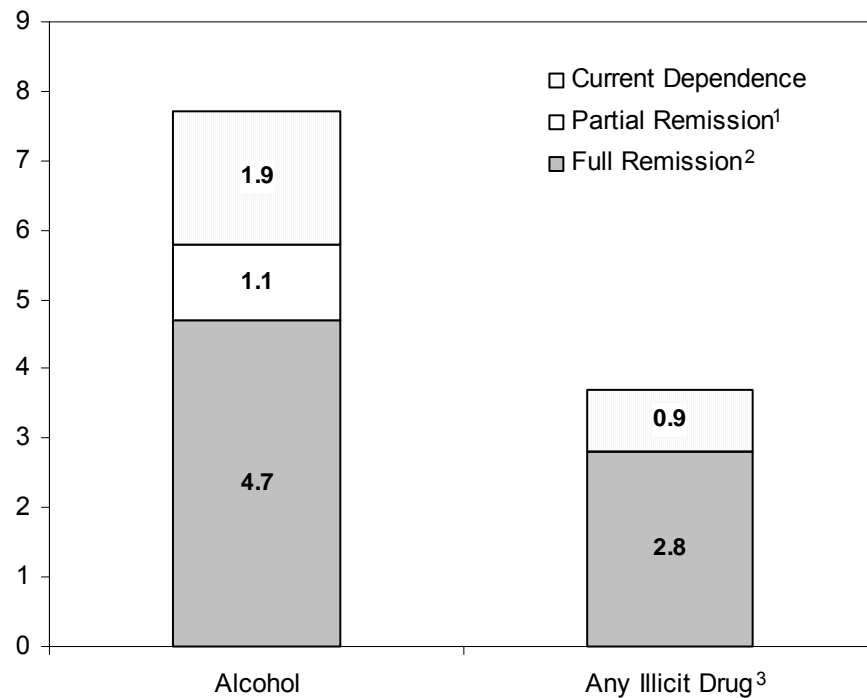
### 6.1.3 Full and Partial Remission

Thus far, the discussion has focused on estimates of current (i.e., past year) dependence or abuse. However, it is important to understand that a certain percentage of the population, although not currently meeting the definitions for dependence, may have done so in the past and are either in full or partial remission. (See Chapter 2 for definitions of full and partial remission.)

**Figure 6.2** shows the percentage of Missouri adults with current dependence as well as those who are in full or partial remission. Highlights from **Figure 6.2** include the following:

- # Approximately 1% of Missouri household adults were in partial remission, and 5% were in full remission for alcohol dependence.
- # Approximately 3% of Missouri household adults were in full remission for any illicit drug dependence.

**Figure 6.2 Status of Substance Use Problems among the Missouri Adult Household Population in the Past Year: 2001/2002**



Note: Data for any illicit drug partial remission were suppressed due to low precision.

<sup>1</sup> Defined as exhibiting three symptoms of dependence during one's lifetime *and* one or two symptoms in the past year.

<sup>2</sup> Defined as exhibiting three symptoms of dependence during one's lifetime *but* none in the past year.

<sup>3</sup> Includes marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamine.

Source: Missouri Household Telephone Survey: 2001/2002.

*An estimated 10% of Missouri adults were in need of treatment, and 24% were in need of treatment or intervention for alcohol or illicit drugs in 2001/2002.*

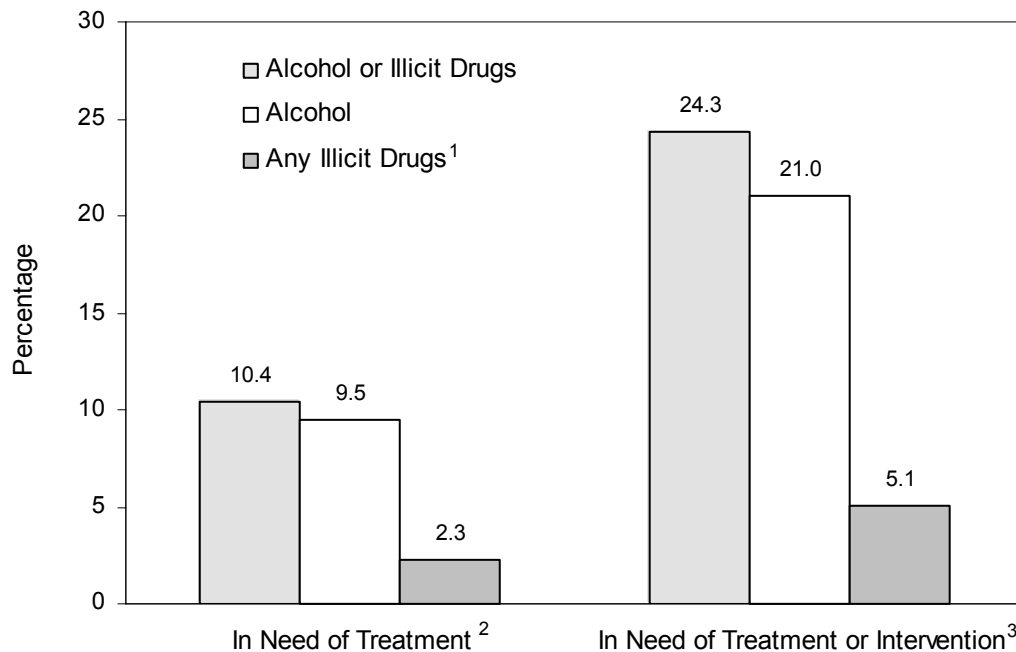
## 6.2 Prevalence of Need for Treatment and Treatment or Intervention

**Figure 6.3** shows the percentage of the Missouri adult household population who were considered to be in need of substance abuse treatment and treatment or intervention in the past 12 months (see definitions of treatment and intervention need in Chapter 2).

An estimated 10% of the adult household population in Missouri in 2001/2002 were *in need of treatment*, and 24% were *in need of treatment or intervention* due to problems with alcohol or any illicit drug, including marijuana, hallucinogens, cocaine, heroin/opiates, inhalants, methamphetamine, or nonmedical use of prescription drugs.<sup>2</sup> These percentages translated to an estimated 431,200 adults in need of treatment and 1,012,000 adults in need of treatment or intervention.

<sup>2</sup> Nonmedical use is defined as use for reasons other than prescribed, in larger amounts than prescribed, more often than prescribed, or without a prescription.

**Figure 6.3 Percentages of the Missouri Adult Household Population in Need of Alcohol or Illicit Drug Use Treatment or Intervention in the Past Year: 2001/2002**



Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> Defined as marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, or stimulants.

<sup>2</sup> Includes people who (a) received formal treatment in the past 12 months, or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>3</sup> Includes people who (a) were determined to need treatment (as described in footnote 2) or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

Source: Missouri Household Telephone Survey: 2001/2002.

The Central region was estimated to have the highest rate of treatment, and the Eastern region was estimated to have the highest rate of treatment or intervention need (**Table 6.3**). Service area estimates are presented in **Table 6.4**. The overall rate of treatment need (10%) from the 2001/2002 survey is well within the range of estimates in the literature and from STNAP surveys in other states.

Alcohol accounted for most of the need for treatment and treatment or intervention among Missouri adults in the household population. An estimated 9.5% of adults in the household population were in need of treatment specifically for alcohol (with or without the need for treatment for problems related to use of other drugs). In comparison, 2% of the

**Table 6.3 Past Year Prevalence and Estimated Numbers (in Thousands) of Missouri Adults in Need of Alcohol or Illicit Drug Use Treatment or Intervention, by Region: 2001/2002**

	Alcohol			Any Illicit Drug <sup>1</sup>			Alcohol or Any Illicit Drug		
	%	Number	95% CI <sup>2</sup>	%	Number	95% CI <sup>2</sup>	%	Number	95% CI <sup>2</sup>
<b>Need for Treatment<sup>3</sup></b>	9.5	397,100	345,100 – 456,000	2.3	96,000	70,100 – 131,200	10.4	431,200	376,400 – 492,900
Central	12.2	68,500	49,600 – 93,400	3.0	16,800	8,300 – 33,400	12.7	71,000	51,800 – 95,800
Eastern	11.1	163,700	130,000 – 204,600	2.5	37,600	21,700 – 64,500	12.5	185,000	148,600 – 228,700
Northwest	6.7	67,100	47,700 – 93,600	1.8	18,200	8,500 – 38,600	7.0	70,600	50,100 – 98,600
Southeast	9.1	45,800	31,500 – 65,700	2.5	12,500	6,300 – 24,500	9.7	48,700	34,000 – 68,900
Southwest	8.5	52,000	35,100 – 75,800	1.8	11,000	4,700 – 25,300	9.1	55,900	38,400 – 80,400
<b>Need for Treatment or Intervention<sup>4</sup></b>	21.0	874,500	801,000 – 952,800	5.1	211,700	17,2500 – 259,200	24.3	1,011,900	933,800 – 1,094,300
Central	21.0	117,500	94,300 – 144,600	5.6	31,700	19,600 – 50,500	23.7	133,100	108,900 – 160,800
Eastern	24.9	368,200	318,700 – 422,600	5.9	8,7500	62,500 – 121,700	28.7	423,200	370,800 – 479,800
Northwest	18.8	189,300	156,500 – 227,200	4.4	44,100	27,800 – 69,200	22.2	222,600	187,000 – 262,800
Southeast	18.5	93,400	74,000 – 116,500	3.9	19,700	11,600 – 33,200	21.2	106,900	86,400 – 130,00
Southwest	17.3	106,100	82,100 – 135,400	4.7	28,700	16,100 – 50,100	20.6	126,100	99,700 – 157,500

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> Defined as use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimated number of people.

<sup>3</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>4</sup> Includes people who (a) were determined to need treatment (as described in footnote 3) or (b) never met *DSM-IV* (1994) criteria for abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

Source: Missouri Household Telephone Survey: 2001/2002.



**Table 6.4 Past Year Prevalence and Estimated Numbers of the Missouri Adult Household Population in Need of Treatment or Intervention, by Service Area: 2001/2002**

Service Area	Need for Treatment <sup>1</sup>			Need for Treatment or Intervention <sup>2</sup>		
	%	95% CI <sup>3</sup>	Number	%	95% CI <sup>3</sup>	Number
1	3.9	1.3 – 10.8	7,100	18.8	12.3 – 27.8	34,600
6	6.7	3.3 – 13.2	12,300	21.6	14.4 – 31.1	39,700
7	15.3	7.8 – 28.0	20,200	25.5	15.7 – 38.5	33,600
8	5.8	1.8 – 17.2	6,300	17.2	9.5 – 29.3	18,800
9	11.1	5.8 – 20.3	18,400	22.1	14.1 – 32.8	36,500
10	7.3	4.1 – 12.7	24,000	18.9	13.4 – 25.9	61,800
11	13.7	8.2 – 21.8	26,100	22.9	16.1 – 31.4	43,700
12	11.7	6.7 – 19.6	23,100	22.7	16.1 – 31.1	44,900
13	12.3	4.9 – 27.5	9,400	20.9	11.0 – 36.0	15,900
14	15.6	7.7 – 28.9	16,900	28.9	18.4 – 42.3	31,400
15	10.4	4.3 – 22.9	8,800	22.6	13.2 – 35.9	19,200
16	15.8	10.1 – 23.8	43,100	34.1	25.9 – 43.3	93,000
17	12.2	6.6 – 21.4	19,400	28.3	20.3 – 38.1	45,100
18	7.0	1.9 – 22.6	5,600	15.8	7.9 – 29.3	12,800
19	4.9	1.2 – 17.4	3,600	21.2	12.0 – 34.5	15,700
20	12.9	4.9 – 29.9	8,300	22.0	11.4 – 38.2	14,100
21	12.7	7.2 – 21.4	17,600	19.0	12.4 – 27.9	26,300
22	5.5	2.1 – 13.3	7,300	23.3	14.3 – 35.7	31,100
JC	5.3	2.9 – 9.5	23,300	23.9	18.4 – 30.4	105,400
SL	12.9	9.9 – 16.7	128,800	28.3	24.0 – 33.1	282,800

Note: See Figure 2.1 for Service Area locations.

Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>2</sup> Includes people described in footnote 1 as well as people who (a) received intervention services in the past year or (b) never met *DSM-IV* (1994) criteria for dependence or abuse, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

household population were in need of treatment for the illicit drugs covered in the telephone survey. Similarly, an estimated 21% of household adults were in need of treatment or intervention for alcohol, and 5% were in need of treatment or intervention for illicit drugs.

**Figure 6.4** compares need for substance use treatment and treatment or intervention rates from the 1997 Missouri Household Telephone Survey with the 2001/2002 rates. Rates of need for treatment and treatment or intervention for alcohol, any illicit drug, and alcohol or illicit drugs increased slightly from 1997 to 2001/2002. Approximately 8% of Missouri adults were in need of alcohol treatment, and 1.5% were in need of illicit drug treatment in 1997 compared with 9.5% and more than 2%, respectively, in 2001/2002. Overall, 8.7% of adults were in need of alcohol or illicit drug treatment in 1997 compared with 10.4% in 2001/2002. Similarly, in 1997 18% of adults were in need of alcohol treatment or intervention compared with 21% in 2001/2002, whereas 3% were in need of illicit drug treatment or intervention in 1997 compared with 5% in 2001/2002. Overall, 19% of adults were in need of alcohol or illicit drug treatment or intervention in 1997 compared with 24% in 2001/2002.

It is important to note that the 1997 Missouri Household Telephone Survey utilized DSM-III-R criteria to determine treatment need, whereas the 2001/2002 survey utilized DSM-IV criteria. According to the Substance Use Disorders Field Trial, DSM-III-R and DSM-IV criteria estimated different rates of abuse and dependence when applied to the same data. DSM-III-R criteria cast the widest net for dependence, and DSM-IV captured more people for abuse. The rate for alcohol abuse doubled from DSM-III-R to DSM-IV, but DSM-III-R was the most inclusive for all other substances (Cotter et al., 1995). Because most of the need for treatment in Missouri is alcohol-related and based on alcohol dependence and abuse, this may explain some of the increase in need for treatment from 1997 to 2001/2002.

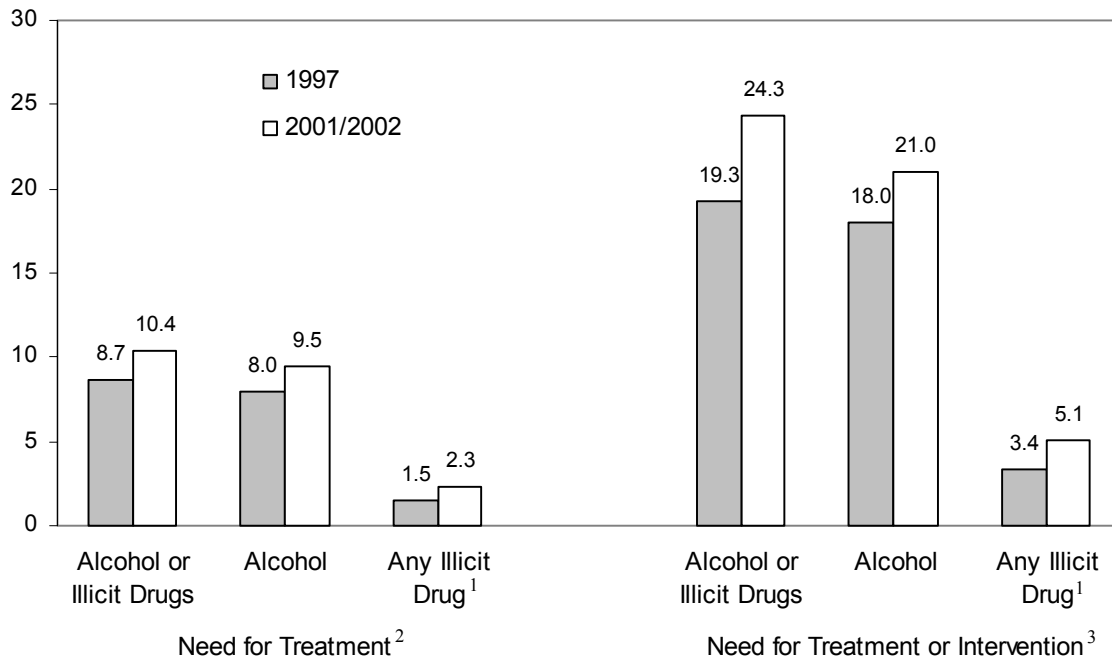
In addition, one should note that survey data from 1997 and 2001/2002 captured only those respondents willing to participate. However, the increased need for treatment in Missouri is similar to findings in other states that have conducted similar surveys. In addition, according to the NHSDA, between 2000 and 2001, there was a significant increase in the number of persons aged 12 or older needing treatment for an illicit drug problem (4.7 million or 2.1% vs. 6.1 million or 2.7%) (SAMHSA, 2002).

## 6.3 Correlates of Need for Treatment

### 6.3.1 Age Group and Sex

**Figure 6.5** and **Table 6.5** provide information on the need for alcohol and other drug treatment among Missouri adults in the household

**Figure 6.4 Comparison of the Prevalence of Substance Use Need for Treatment or Intervention in the Past Year in the Adult Missouri Household Population: 1997 and 2001/2002**



Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> Defined as use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamine.

<sup>2</sup> For 1997, need for treatment based on DSM-III-R criteria. See Appendix E for details. For 2001/2002, includes people who (a) received formal treatment in the past 12 months or (b) met *DMS-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined in 2001/2002 and Appendix E for details regarding how “need for treatment” was defined in 1997.

<sup>3</sup> Includes adults in need of treatment. Also includes adults who never met DSM-III-R or DSM-IV criteria for abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined for 2001/2002 and Appendix E for details regarding how “need for treatment or intervention” was defined in 1997.

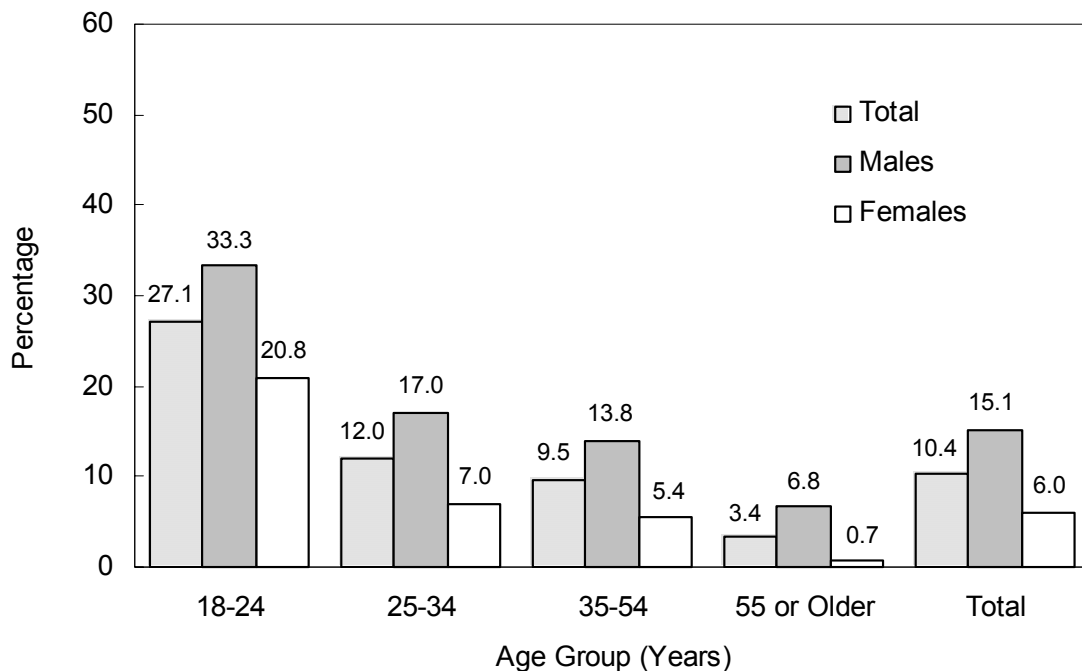
Source: Missouri Household Telephone Survey: 1997; Missouri Household Telephone Survey: 2001/2002.

*About 300,000 men and 131,000 women in the Missouri adult household population needed substance abuse treatment.*

population according to sex and age. As discussed in Chapter 2, readers should keep in mind that low response rates for the study make it difficult to assess the validity of the results (see Chapter 2 for a discussion of response rates and nonresponse bias).

Highlights from **Figure 6.5** and **Table 6.5** include the following:

- # An estimated 300,000 adult men and 131,000 adult women in the Missouri household population were identified as being in need of treatment for problems related to their use of alcohol or other drugs in 2001/2002. As shown by the confidence intervals

**Figure 6.5 Past Year Prevalence of Missouri Adults in Need of Treatment, by Gender and Age Group: 2001/2002**

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

“In need of treatment” includes people who (a) received formal treatment in the past 12 months, or (b) met lifetime *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

Source: Missouri Household Telephone Survey: 2001/2002.

for these estimates, however, there may have been as few as 254,000 men or as many as 352,000 in need of treatment. Similarly, there may have been as few as 104,000 women or as many as 166,000 in need of treatment.

*Men were more likely than women, and young adults aged 18 to 24 were more likely than adults in other age groups, to need treatment.*

- # Need for alcohol or other drug treatment was more common among men than women. An estimated 15% of men in the household population in 2001/2002 were classified as being in need of treatment, compared with 6% of women. The higher percentages of men in need of treatment held across all age groups.
- # Higher percentages of younger adults aged 18 to 24 were in need of treatment compared with percentages of adults in other age groups. About one-third of young males (33%) and one-fifth (21%) of young females aged 18 to 24 in the household

**Table 6.5 Past Year Estimated Numbers of Missouri Adults in Need of Treatment,<sup>1</sup> by Gender and Age Group: 2001/2002**

Age Group (Years)	Gender				Total <sup>4</sup>	
	Male		Female			
	Number <sup>2</sup>	95% CI <sup>3</sup>	Number <sup>2</sup>	95% CI <sup>3</sup>	Number <sup>2</sup>	95% CI <sup>3</sup>
18–24	89,600	66,300 – 116,300	55,400	38,300 – 77,600	145,000	115,100 – 179,300
25–34	62,500	43,700 – 87,100	26,000	16,400 – 40,600	88,400	66,400 – 116,500
35–54	110,500	83,800 – 143,900	44,800	30,000 – 66,400	155,300	123,500 – 194,200
55 or older	37,300	24,300 – 56,400	5,200	2,100 – 12,700	42,500	28,700 – 62,600
Total	299,700	254,200 – 351,800	131,400	104,000 – 165,500	431,200	376,400 – 492,900

Note : Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>2</sup> Estimated number of people rounded to the nearest hundred.

<sup>3</sup> The 95% CI = 95% confidence interval of the estimated number of people.

<sup>4</sup> Totals may differ slightly from the sum of the estimated numbers of males and females because of rounding.

Source: Missouri Household Telephone Survey: 2001/2002.

population were in need of treatment. This was consistent with the relatively high rates of alcohol and illicit drug use among younger adults shown in Chapter 5.

### 6.3.2 Race/Ethnicity and Sex

**Table 6.6** shows prevalence estimates of treatment need according to race/ethnicity and sex for the Missouri adult household population as a whole. In addition, the tables provide the estimated numbers of males and females in need of treatment by race/ethnicity.

Highlights from **Table 6.6** include the following:

- # There was little variability in the estimated rate of need for treatment in the past year among the racial/ethnic groups. Approximately 11% of Blacks, 11% of Hispanics, 10% of Whites, and 8% of adults in the “other” racial/ethnic category were in need of substance abuse treatment in the past year.
- # An estimated 368,000 White adults, 45,000 Black adults, 8,000 Hispanic adults, and 9,000 adults in the other racial/ethnic category were in need of substance abuse treatment in the past year. However, the confidence intervals show the range in which the true number of adults in need of treatment for each racial/ethnic group are likely to be found. For example, although 8,000 Hispanic adults were estimated to need treatment, the true number is likely to fall between the lower bound estimate of 3,500 and 18,300.
- # Males in each racial/ethnic category had higher rates of treatment need than females. Hispanic males had the highest estimated rate of past year treatment need. Twenty percent of Hispanic males, 16% of Black males, 15% of White males, and 13% of males in the other racial/ethnic category were estimated to need substance abuse treatment.
- # In comparison, rates of treatment need did not follow the same pattern for females by race or ethnic group. Approximately 6% each of White and Black females, 4% of females in other racial/ethnic category, and less than 1% of Hispanic females were in need of past year substance abuse treatment services.

## 6.4 Correlates of Need for Treatment or Intervention

### 6.4.1 Age Group and Sex

**Figure 6.6** and **Table 6.7** provide information on the need for alcohol and other drug treatment or intervention among Missouri adults in the household population according to sex and age. As described earlier,

**Table 6.6 Past Year Prevalence and Estimated Numbers of Missouri Adults in Need of Treatment,<sup>1</sup> by Gender and Race/Ethnicity: 2001/2002**

Racial/Ethnic Group	Gender						Total <sup>4</sup>		
	Male			Female					
	%	Number <sup>2</sup>	95% CI <sup>3</sup>	%	Number <sup>2</sup>	95% CI <sup>3</sup>	%	Number <sup>2</sup>	95% CI <sup>3</sup>
White	14.9	253,600	212,800 – 300,600	6.2	114,800	90,300 – 145,500	10.4	368,400	319,400 – 423,900
Black	16.2	30,800	15,700 – 55,700	6.2	14,400	5,600 – 35,200	10.7	45,200	26,200 – 75,400
Hispanic	20.0	8,200	3,400 – 16,800	0.4	100	0 – 700	11.1	8,400	3,500 – 18,300
Other <sup>5</sup>	13.0	7,100	3,300 – 14,200	3.7	2,000	700 – 5,200	8.3	9,200	4,800 – 16,800
Total	15.1	299,700	254,200 – 351,800	6.0	131,400	104,000 – 165,500	10.4	431,200	376,400 – 492,900

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>2</sup> Estimated number of people rounded to the nearest hundred.

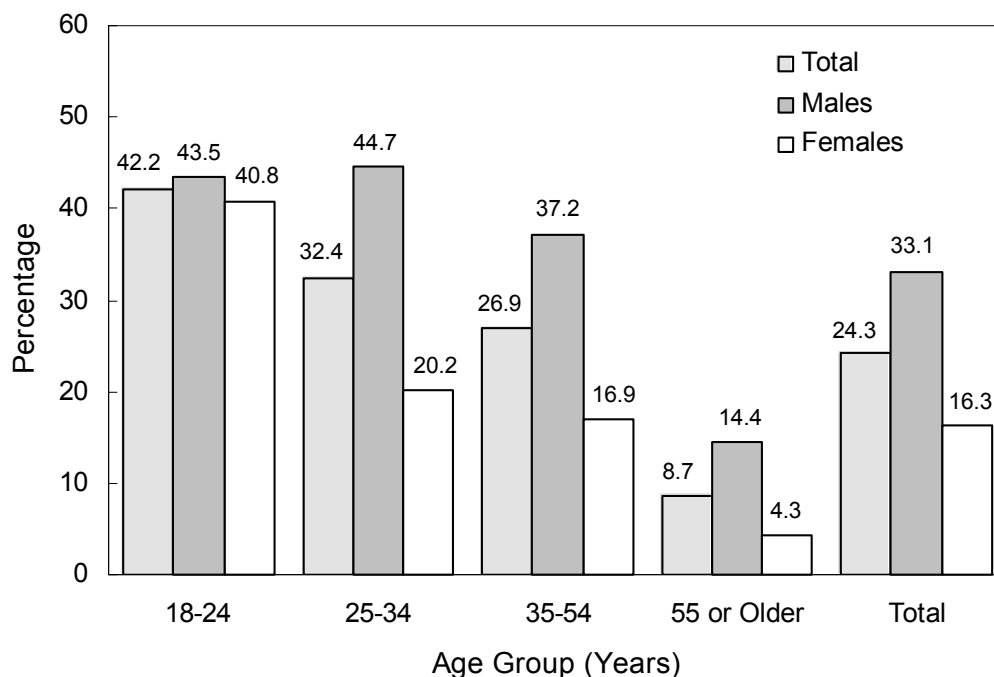
<sup>3</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>4</sup> Totals may differ slightly from the sum of the estimated numbers of Whites, Blacks, Hispanics, and Others because of rounding.

<sup>5</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

Source: Missouri Household Telephone Survey: 2001/2002.

**Figure 6.6 Past Year Prevalence of Missouri Adults in Need of Alcohol and Other Drug Treatment or Intervention,<sup>1</sup> by Gender and Age Group: 2001/2002**



<sup>1</sup> Includes adults in need of treatment. Also includes adults who never met *DSM-IV* (1994) criteria for abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” and “need for treatment or intervention” were defined.

Source: Missouri Household Telephone Survey: 2001/2002.

readers should keep in mind that the low response rate for the study makes it difficult to assess the validity of the results.

Highlights from **Figure 6.6** and **Table 6.7** include the following:

*As with need for treatment, men were more likely than women and young adults aged 18 to 24 were more likely than adults in other age groups to need treatment or intervention.*

- # An estimated 658,000 adult men and 354,000 adult women in the Missouri household population were identified as being in need of treatment or intervention for problems related to their use of alcohol or other drugs in 2001/2002. As shown by the confidence intervals for these estimates, however, there may have been as few as 596,000 or as many as 723,000 men in need of treatment or intervention. Similarly, there may have been as few as 310,000 or as many as 403,000 women in need of treatment or intervention.
- # As with need for treatment, need for treatment or intervention was more common among men than women. An estimated 33% of men in the household population in 2001/2002 were classified as being in need of treatment or intervention, compared with 16% of women. Although the higher percentages of men in need of treatment or intervention generally held across all age



**Table 6.7 Past Year Estimated Numbers of Missouri Adults in Need of Treatment or Intervention,<sup>1</sup> by Gender and Age Group: 2001/2002**

Age Group (Years)	Gender				Total <sup>4</sup>	
	Male		Female			
	Number <sup>2</sup>	95% CI <sup>3</sup>	Number <sup>2</sup>	95% CI <sup>3</sup>	Number <sup>2</sup>	95% CI <sup>3</sup>
18–24	116,800	91,500 – 143,400	108,700	86,300 – 132,600	225,400	191,200 – 261,100
25–34	164,500	136,200 – 193,800	75,000	57,800 – 95,800	239,600	205,000 – 276,900
35–54	297,300	256,600 – 340,400	139,900	112,700 – 172,000	437,200	386,200 – 492,100
55 or older	79,100	59,200 – 104,200	30,700	20,300 – 46,100	109,800	86,400 – 138,800
<b>Total</b>	657,700	595,700 – 722,700	354,300	310,100 – 403,400	1,011,900	933,800 – 1,094,300

<sup>1</sup> Includes people who (a) were determined to need treatment or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

<sup>2</sup> Estimated number of people rounded to the nearest hundred.

<sup>3</sup> The 95% CI = 95% confidence interval of the estimated number of people.

<sup>4</sup> Totals may differ slightly from the sum of the estimated numbers of males and females because of rounding.

Source: Missouri Household Telephone Survey: 2001/2002.

groups, men and women aged 18 to 24 had virtually the same estimated rate.

- # Higher percentages of younger adults aged 18 to 24 were in need of treatment or intervention compared with percentages of adults in other age groups. More than two-fifths of young males (44%) and females (42%) aged 18 to 24 in the household population were in need of treatment or intervention.

#### 6.4.2 Race/Ethnicity and Sex

**Table 6.8** shows prevalence estimates and estimated numbers of treatment or intervention need according to race/ethnicity and sex for the Missouri adult household population as a whole.

Highlights from **Table 6.8** include the following:

- # As with need for treatment, there was little variability in the estimated rate of need for treatment or intervention in the past year among the racial/ethnic groups. Approximately 27% of Hispanics, 25% of Whites, 23% of Blacks, and 21% of adults in the other racial/ethnic category were in need of substance abuse treatment or intervention.
- # An estimated 871,000 White adults, 99,000 Black adults, 23,000 adults in the other racial/ethnic category, and 20,000 Hispanic adults were in need of substance abuse treatment or intervention in the past year. However, the confidence intervals show the range in which the true number of adults in need of treatment or intervention are likely to be found. For example, although 99,000 Black adults were estimated to need treatment or intervention, the true number is likely to fall between the lower bound estimate of 69,400 and 135,600.
- # Males in each racial/ethnic category had higher rates of treatment or intervention need than females. Patterns were slightly different from those for treatment need. Black males had the highest estimated rate observed for past year treatment or intervention need. Approximately 36% of Black males, 34% of Hispanic males, 33% of White males, and 28% of males in the other racial/ethnic category were estimated to need substance abuse treatment or intervention.
- # In comparison, rates of treatment or intervention need did not follow the same pattern for females by race or ethnic group. Approximately 18% of Hispanic females, 17% of White females, 13% of Black females, and 13% of females in the other racial/ethnic category were in need of past year substance abuse treatment or intervention services.

*Males in each racial/ethnic category had higher rates of treatment or intervention need than females.*

**Table 6.8 Past Year Prevalence and Estimated Numbers of Missouri Adults in Need of Substance Abuse Treatment or Intervention,<sup>1</sup> by Gender and Race/Ethnicity: 2001/2002**

Racial/Ethnic Group	Gender						Total <sup>4</sup>		
	Male			Female					
	%	Number <sup>2</sup>	95% CI <sup>3</sup>	%	Number <sup>2</sup>	95% CI <sup>3</sup>	%	Number <sup>2</sup>	95% CI <sup>3</sup>
White	32.9	559,200	504,100 – 617,300	16.8	311,500	271,400 – 356,100	24.5	870,700	801,000 – 944,500
Black	36.3	69,000	45,200 – 97,000	12.8	29,700	16,000 – 52,300	23.4	98,700	69,400 – 135,600
Hispanic	33.7	13,900	1,900 – 14,900	17.7	6,000	1,900 – 14,900	26.5	19,900	11,300 – 31,800
Other <sup>5</sup>	28.4	15,600	9,700 – 23,300	12.7	7,100	3,400 – 13,800	20.5	22,700	15,200 – 32,600
Total	33.1	657,700	595,700 – 722,700	16.3	354,300	310,100 – 403,400	24.3	1,011,900	933,800 – 1,094,300

<sup>1</sup> Includes people who (a) were determined to need treatment or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

<sup>2</sup> Estimated number of people rounded to the nearest hundred.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>4</sup> Totals may differ slightly from the sum of the estimated numbers of Whites, Blacks, Hispanics, and Others because of rounding.

<sup>5</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

Source: Missouri Household Telephone Survey: 2001/2002.

## 6.5 Insurance Coverage and Benefits for Adults in Need of Treatment

The ability (or inability) of adults in Missouri to pay for substance abuse treatment if they need it can have a broad impact on people in the state as a whole. On the one hand, people who need treatment may continue to go untreated if they do not have health insurance or if their insurance provides limited or no coverage for substance abuse treatment. In addition, costs associated with paying for treatment services among uninsured or underinsured people in Missouri might be passed on to others in the form of taxes and government spending, higher costs for treatment services for those whose insurance does cover treatment, or higher insurance premiums for individuals or employers.

**Table 6.9** shows estimates of health insurance coverage among the Missouri household population in need of treatment in the year before the 2001/2002 survey. Telephone survey respondents were asked whether they were covered by private insurance or government-funded insurance (e.g., Medicare, Medicaid) in the calendar month prior to the interview.<sup>3</sup> These categories are not mutually exclusive, in that a person could have been covered by more than one type of health insurance. For example, people covered by Medicare could also supplement their Medicare coverage with private insurance to pay for services not covered by Medicare. In particular, Medicare does not pay for substance abuse treatment that is not hospital based. The “no insurance coverage” line refers to people who reported neither private insurance nor government-funded insurance in the previous calendar month.

*More than one-fifth of the adults in the Missouri household population who needed substance abuse treatment did not have health insurance coverage.*

More than one-fifth of adults in the Missouri household population who were in need of treatment reported not having health insurance coverage. Approximately 11% reported having government-funded insurance. Moreover, of the adults in need of treatment who had private health insurance (74%), an unknown percentage may not have been able to use their health insurance benefits to pay for treatment, or their coverage may not have been adequate. The interview generally did not examine whether people’s medical insurance covered substance abuse treatment services.<sup>4</sup> Thus, the estimated one in five Missouri adults in need of treatment who lacked insurance to pay for treatment is certainly a conservative estimate of this potential access barrier.

<sup>3</sup>As an example of “calendar month,” if a respondent was interviewed in the month of May, then the previous calendar month would be April.

<sup>4</sup>If respondents indicated that they felt the need for treatment services (or they wanted treatment services in addition to what they received), they were asked whether they were not able to obtain help because they lacked insurance to pay for treatment or their insurance did not cover treatment. However, very few respondents (47 out of 4,042) reported that they felt the need for treatment.

**Table 6.9 Health Insurance Coverage and Receipt of Social Services among Adult Missouri Household Residents in Need of Substance Abuse Treatment: 2001/2002**

Measure	In Need of Treatment, Past 12 Months <sup>1</sup>		
	%	95% CI <sup>2</sup>	Number <sup>3</sup>
<b>Insurance Coverage, Past Month</b>			
Any insurance coverage <sup>4</sup>	78.2	71.3 – 83.9	332,800
Private insurance	73.9	66.9 – 79.9	313,100
Government-funded insurance <sup>5</sup>	10.9	7.2 – 16.0	46,200
No insurance coverage reported	21.8	16.1 – 28.7	92,600

Note: Estimates are percentages of people in need of treatment who were covered by different insurance plans or had some other indicator of potential Medicaid eligibility.

<sup>1</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>3</sup> Estimated number of people rounded to the nearest hundred.

<sup>4</sup> Includes individuals who initially did not report private- or government-funded report insurance coverage but answered affirmatively to a follow-up question about “any” coverage.

<sup>5</sup> Includes such coverage as Medicare, Medicaid, or Veterans Administration (VA) coverage.

Source: Missouri Household Telephone Survey: 2001/2002.

## 6.6 Treatment History

**Table 6.10** shows the percentages and estimates of numbers of the Missouri adult household population who had received various forms of assistance for substance use in their lifetime and in the past year, as well as the percentages of adults in need of treatment who received treatment during these same time periods. In particular, estimates of the percentages of adults in need of treatment in the past year who actually received such treatment indicate the “met need” for treatment. Conversely, then, low percentages of adults in need of treatment who actually received treatment could suggest a high “unmet need” for treatment services.

According to **Table 6.10**, among all adults in the Missouri household population, slightly more than 3% had ever received any form of outside assistance in their lifetime for their use of alcohol or other drugs; such assistance could include use of self-help groups (such as AA or Narcotics Anonymous [NA]), counseling from a psychologist or psychiatrist, or pastoral counseling. Slightly less than 3% of the Missouri adult household population had ever received detoxification, residential treatment, treatment in a halfway house, or outpatient treatment.

Among adults in need of treatment in the year before the survey, 6.4% had ever received some form of assistance, and 6.3% had received

*About 3% of Missouri adults had received outside assistance for their substance use at some point in their lives. Approximately 2% of Missouri adults had ever received formal substance abuse treatment.*

**Table 6.10 History of Alcohol or Other Drug Treatment in the Lifetime and Past Year in the Missouri Adult Household Population: 2001/2002**

Measure	Total Missouri <sup>1</sup>				In Need of Treatment <sup>2</sup>				In Need of Treatment or Intervention <sup>3</sup>			
	Lifetime		Past Year		Lifetime		Past Year		Lifetime		Past Year	
	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>
<b>Any Formal Treatment</b>	2.9	2.2 – 3.9	0.2	0.0 – 0.6	6.3	3.6 – 10.9	1.5	0.4 – 5.7	7.5	5.2 – 10.9	0.6	0.2 – 2.5
Detoxification	2.1	1.5 – 3.0	0.1	0.0 – 0.6	4.5	2.2 – 9.0	0.8	0.1 – 5.7	5.8	3.6 – 9.1	0.4	0.0 – 2.5
Residential rehabilitation	2.4	1.8 – 3.3	0.1	0.0 – 0.6	3.9	1.9 – 7.8	0.8	0.1 – 5.6	5.6	3.5 – 8.8	0.4	0.1 – 2.4
Halfway or recovery house	0.9	0.6 – 1.5	**	**	1.3	0.4 – 4.6	**	**	2.3	1.2 – 4.3	**	**
Outpatient rehabilitation	1.9	1.4 – 2.6	0.2	0.0 – 0.6	5.3	2.9 – 9.5	1.5	0.4 – 5.7	5.1	3.4 – 7.6	0.6	0.2 – 2.5
Methadone maintenance <sup>5</sup>	0.2	0.1 – 0.5	**	**	0.7	0.1 – 4.1	**	**	0.6	0.2 – 2.0	**	**
<b>Other Forms of Assistance</b>	3.1	2.4 – 3.9	0.2	0.1 – 0.6	6.4	3.6 – 11.0	1.5	0.4 – 5.7	7.8	5.7 – 10.6	0.9	0.3 – 2.6
Therapy/counseling outside a formal program	2.1	1.6 – 2.9	0.1	0.0 – 0.4	5.1	2.7 – 9.6	0.6	0.1 – 4.2	5.8	3.9 – 8.3	0.5	0.1 – 1.8
Self-help groups	2.6	2.0 – 3.4	0.2	0.1 – 0.6	4.9	2.6 – 9.3	1.5	0.4 – 5.7	6.3	4.4 – 9.0	0.7	0.2 – 2.4
Pastoral counseling	1.4	1.0 – 2.0	0.1	0.0 – 0.5	2.6	1.1 – 5.9	0.6	0.1 – 4.3	4.0	2.5 – 6.3	0.3	0.0 – 1.9
Drinking-driver program	0.8	0.5 – 1.2	**	**	1.4	0.6 – 3.6	**	**	2.5	1.4 – 4.3	**	**
<b>Any Treatment or Assistance<sup>6</sup></b>	3.3	2.5 – 4.2	0.8	0.4 – 1.6	6.4	3.6 – 11.0	3.5	1.6 – 7.5	8.7	6.2 – 12.0	3.4	1.8 – 6.5

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

\*\* Estimated percentage rounds to zero.

<sup>1</sup> Questions about treatment history were not asked of respondents who were lifetime abstainers of alcohol or other drugs.

<sup>2</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>3</sup> Includes people who (a) were determined to need treatment (as described in footnote 2) or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

<sup>4</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>5</sup> Refers to heroin/opiate users only.

<sup>6</sup> Any treatment or any other form of assistance. Individuals may report more than one type of treatment or assistance.

Source: Missouri Household Telephone Survey: 2001/2002.

*Among Missouri adults who needed substance abuse treatment in 2001/2002, about 6% had received assistance for their substance use at some point in their lives and 3.5% had in the past year. About 6% had ever received formal treatment, and only 1.5% had in the past year.*

detoxification, residential treatment, treatment in a halfway house, outpatient treatment, or methadone maintenance in their lifetime. Approximately 4% to 5% had gone through outpatient treatment, been detoxified, or been in residential rehabilitation. Less than 2% had been in a halfway or recovery house or had received methadone maintenance. Although these rates are higher than those for the adult household population as a whole, the large majority of adults who would currently be considered in need of treatment had never received formal treatment services for their substance abuse. Only 3.5% of household adults estimated to currently need treatment had received any assistance in the past year. This indicates a high unmet need for treatment services.

**Table 6.11** shows the estimated numbers of adults in the Missouri household population who were currently in need of treatment and who had received various forms of treatment or other assistance in their lifetime or in the year before the 2001/2002 survey.<sup>5</sup> Although more than 431,000 adults in the household population were estimated to be currently in need of treatment (see **Table 6.3**), these survey data indicate that only 6,400 of adults in need of treatment had received formal treatment in the form of residential treatment, detoxification, services in a halfway house, outpatient treatment, or methadone maintenance in the past year, and 27,200 had received such treatment in their lifetime. Of the more than 1,000,000 adults estimated to be in need of treatment or intervention, only 76,300 reported having ever received treatment, and only 6,400 reported having received services in the past year. This is significantly lower than the number of admissions in 2001 and 2002 reported by ADA. According to ADA, there were 31,952 admissions in Missouri in 2001 and 31,338 admissions in 2002 for adults aged 18 or older. The ADA data show that the 2001/2002 Missouri Household Telephone Survey estimates of treatment utilization are significantly lower than ADA's official counts.

In addition, compared with the 2000 NHSDA, the 2001/2002 Missouri Household Telephone Survey yielded substantially lower estimates of adults in need of treatment who actually received services in the past year (18% illicit drug treatment vs. 1.5% alcohol or illicit drug treatment, respectively). The 2001/2002 telephone survey estimates of treatment utilization are probably conservative for a number of reasons. In particular, the NHSDA data are self-administered; that is, respondents answer questions via a laptop computer. The 2001/2000 Missouri Household Telephone Survey did not allow for respondents to privately enter their responses and, as a result, likely underreported the services they received. In addition, the treatment utilization data in **Table 6.11** do not reflect people in "nonhousehold" populations who

<sup>5</sup> Adults who received detoxification, residential treatment, services in a halfway house, outpatient treatment, or methadone maintenance in a formal substance abuse treatment facility were considered to be in need of treatment, regardless of whether they met diagnostic criteria for dependence or abuse.

**Table 6.11 Estimated Numbers of Missouri Adults in Need of Alcohol or Other Drug Treatment or Intervention Who Received Treatment in Lifetime and Past Year: 2001/2002**

Measure	In Need of Treatment <sup>1</sup>				In Need of Treatment or Intervention <sup>2</sup>			
	Lifetime		Past Year		Lifetime		Past Year	
	Number (Thousands)	95% CI <sup>3</sup>	Number (Thousands)	95% CI <sup>3</sup>	Number (Thousands)	95% CI <sup>3</sup>	Number (Thousands)	95% CI <sup>3</sup>
<b>Any Treatment<sup>4</sup></b>	27,200	15,400 – 47,000	6,400	1,600 – 24,400	76,300	52,300 – 110,200	6,400	1,600 – 24,900
Detoxification	19,300	9,400 – 38,900	3,600	500 – 24,400	58,600	36,800 – 92,100	3,600	500 – 25,000
Residential rehabilitation	16,700	8,100 – 33,500	3,600	500 – 24,200	56,500	35,600 – 88,800	3,600	500 – 24,800
Halfway or recovery house	5,800	1,700 – 19,700	**	**	23,400	12,600 – 43,200	**	**
Outpatient rehabilitation	22,700	12,400 – 40,800	6,400	1,600 – 24,500	51,800	34,500 – 77,100	6,400	1,600 – 25,000
Methadone maintenance	2,900	500 – 17,600	**	**	6,500	2,100 – 19,800	**	**
<b>Other Forms of Assistance<sup>4</sup></b>	27,400	15,600 – 47,200	6,400	1,600 – 24,400	78,700	57,300 – 107,400	9,300	3,300 – 26,300
Therapy/counseling outside a formal program	22,100	11,500 – 41,500	2,800	400 – 18,100	58,200	39,800 – 84,300	4,700	1,200 – 18,500
Self-help groups	21,300	11,100 – 40,100	6,400	1,600 – 24,500	63,600	44,100 – 90,800	7,400	2,200 – 24,700
Pastoral counseling	11,000	4,700 – 25,600	2,700	400 – 18,600	40,500	25,400 – 64,000	2,700	400 – 18,900
Drinking-driver program	6,200	2,500 – 15,400	**	**	25,400	14,600 – 43,800	**	**
<b>Any Treatment or Assistance<sup>5</sup></b>	27,500	15,700 – 47,300	15,200	7,000 – 32,400	87,600	62,400 – 121,800	34,700	18,100 – 65,500

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

\*\* Estimated percentage rounds to zero.

<sup>1</sup> Includes people who (a) received formal treatment in the past 12 months, or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>2</sup> Includes people who (a) were determined to need treatment (as described in footnote 1) or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

<sup>3</sup> The 95% CI = 95% confidence interval, in thousands, for the estimated number of people.

<sup>4</sup> Because of the error described in the above note, the numbers of adults receiving various forms of treatment and other assistance are underestimates.

<sup>5</sup> Any treatment or any other form of assistance. Individuals may report more than one type of treatment or assistance.

Source: Missouri Household Telephone Survey: 2001/2002.



may have received treatment services in the past 12 months, such as people who were incarcerated or homeless, because these populations were not covered in the telephone survey. Similarly, the telephone survey did not cover people in households without telephones. In addition, the telephone survey respondents were drawn from adults who were designated as “usually” living at the sampled residence. Adults who were staying in the household as guests (including college students who usually lived somewhere else) were not eligible to be interviewed. For this reason, the telephone survey sample did not cover people who do not have stable housing of their own but instead may move among several different households and stay in each for only short periods at a time. Although adults in this type of living situation may not officially be considered homeless, they may be at high risk of homelessness. If adults in these nonhousehold populations, adults in households without telephones, or adults without stable residences were more likely than adults in households with telephones to have received treatment, then data from these additional populations would be expected to raise the estimated numbers of people who received treatment in the past year, relative to the estimates shown in **Table 6.11**.

*Most Missouri adults in the household population who were in need of treatment in the past year had never received treatment in their entire lives, much less in the past year.*

Nonresponse to the telephone survey also could have affected the estimates of the number of people who received treatment (see **Table 2.2**). If nonrespondents to the telephone survey were more likely than respondents to have received treatment, then estimates of the number of people who received treatment might have been greater if more of these nonrespondents had agreed to participate.

Despite these potential limitations of the treatment data from the telephone survey, they still make an important point: most Missouri adults in the household population who were in need of treatment in the past year had *never* received treatment in their entire lives, much less in the past year. Moreover, these findings underscore the limitation of using treatment admission data to estimate the size of the overall population in need of services.

In addition, depending on the reasons for the gap between the need for treatment and actual receipt of treatment, these results could have important implications for program planning in Missouri. The next section addresses some of these issues further, particularly the issue of unmet demand for treatment services.

## 6.7 Demand for Treatment Services

As noted above, findings from **Table 6.11** indicate that only a relatively small number of Missouri adults in the household population who were in need of treatment in the past 12 months actually received treatment services. On the one hand, people who would objectively be classified as being in need of treatment based on their history of substance dependence or abuse may not consider themselves to need treatment.

Stated another way, they may not have a “felt need” for treatment services despite the considerable problems that their substance use was causing them. However, the treatment system in Missouri might need to be prepared to accommodate some of these people if they want treatment services at a later date.

*Compared with the number of Missouri adults who received treatment in the past year, almost 4 times as many adults wanted treatment services or additional services.*

Another group of people who are of interest to treatment planners in the state are people in need of treatment who felt the need for treatment but did not receive it or who wanted more services than what they received. These people represent a group who encountered one or more barriers to their receipt of treatment. If a limited “window of opportunity” exists where many substance abusers may be ready or willing to receive treatment, then barriers to treatment may make it difficult to take advantage of this readiness.

**Table 6.12** shows the estimated percentages and numbers of Missouri adults who wanted treatment but did not receive it or who felt the need for more treatment than they received. Although an estimated 6,400 adults received formal treatment services in the 12 months before the 2001/2002 survey, almost 4 times as many adults were estimated to want treatment (or additional treatment) but did not receive it. Specifically, an estimated 23,400 Missouri adults either wanted treatment but did not receive it or wanted additional services. An estimated 14,900 adults received some services but wanted more than they got. An additional 8,500 adults wanted treatment but had not received any, either formally or through self-help groups such as AA or NA.

As noted previously, however, an estimated 431,000 adults in the Missouri household population were in need of treatment in the past 12 months (**Table 6.3**). This is much greater than the estimated 6,400 adults who received formal treatment. This estimate of 431,000 adults in need of treatment was also considerably greater than the estimated 23,400 adults who wanted treatment or additional services. These findings suggest that the large majority of Missouri adults who could be classified as needing treatment do not see the need for assistance, despite reports of problems that would indicate need.

## 6.8 Levels of Care

To assist the State of Missouri in planning for treatment services, this section identifies the level of care Missouri adults in need of alcohol or illicit drug treatment services may require (see Chapter 2 for a detailed description of levels of care). Using ASAM patient placement criteria (PPC2), adults in need of treatment were assigned to one of four levels of care, including outpatient treatment (Level I), intensive outpatient (Level II), residential/inpatient treatment (Level III), and medically managed intensive inpatient treatment (Level IV). Estimates were run both for 1997 and the 2001/2002 Missouri Household Telephone

**Table 6.12 Demand for Treatment Services in the Past Year in the Missouri Adult Household Population: 2001/2002**

Measure	%	Number (Thousands)	95% CI <sup>1</sup>
<b>Received Assistance</b>			
Any assistance <sup>2</sup>	0.8	34,700	17,900 – 66,700
Treatment <sup>3</sup>	0.2	6,400	1,600 – 25,200
Other assistance <sup>4</sup>	0.2	9,300	3,300 – 26,500
<b>Unmet Demand</b>			
Any unmet demand <sup>5</sup>	0.6	23,400	12,800 – 42,700
Wanted additional services <sup>6</sup>	0.4	14,900	6,500 – 34,200
Felt the need for treatment, but did not receive assistance	0.2	8,500	3,800 – 18,800

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated number of people.

<sup>2</sup> Any receipt of treatment or other forms of assistance in the past 12 months for alcohol or other drug abuse, as described in footnotes 3 and 4.

<sup>3</sup> Received detoxification, residential rehabilitation, halfway or recovery house, outpatient rehabilitation, or methadone maintenance in the past 12 months. However, because of the error described in the above note, the number of adults reporting receiving treatment is an underestimate.

<sup>4</sup> Received therapy or counseling outside of formal program, attended self-help groups, received pastoral counseling, or attended a drinking-driver program in the past 12 months. However, because of the error described in the above note, the number of adults reporting receiving other forms of assistance is an underestimate.

<sup>5</sup> Wanted additional treatment or other services in the past 12 months, or felt the need for treatment in the past 12 months, but did not receive assistance.

<sup>6</sup> Received at least some assistance for alcohol or drug abuse, but wanted additional services.

Source: Missouri Household Telephone Survey: 2001/2002.

Surveys. It is important to remember that need for treatment was based on different criteria (*DSM-III-R* in 1997 and *DSM-IV* in 2001/2002). Since *DSM-III-R* and *DSM-IV* criteria define people differently in terms of abuse and dependence, and ultimately affect the estimate of those in need of treatment services, the distribution of level of care may also be affected.

Of the Missouri adults shown to be in need of treatment in 1997, 39% were found to need outpatient treatment (ASAM Level I), 42% were in need of intensive outpatient treatment/partial hospitalization (Level II), 6% were in need of medically monitored residential services (Level III), and 12% needed medically managed treatment (Level IV) (**Table 6.13**). Males were more likely to need outpatient treatment (Level I) (42%), and females were more likely to need intensive outpatient treatment (Level II) (50%). There was little difference in the level of care distribution by age (**Table 6.14**).

**Table 6.13 ASAM Levels of Service Need among the Missouri Adult Household Population in Need of Treatment, by Sex: 1997**

Level of Care	Adults Currently in Need of Treatment								
	Males			Females			Total		
	%	95% CI	Number	%	95% CI	Number	%	95% CI	Number
Outpatient treatment (Level I)	42.0	35.5 – 48.8	104,900	31.3	22.6 – 41.4	28,400	39.1	33.8 – 44.7	133,300
Intensive outpatient (Level II)	39.5	33.0 – 46.3	98,700	49.6	40.0 – 59.2	45,100	42.2	36.8 – 47.8	143,800
Residential/inpatient treatment (Level III)	7.1	3.9 – 12.3	17,700	4.1	1.9 – 8.5	3,700	6.3	3.8 – 10.2	21,300
Medically managed intensive inpatient treatment (Level IV)	11.5	7.7 – 16.8	28,600	15.1	9.4 – 23.4	13,700	12.4	9.1 – 16.7	42,400

Note: See Chapter 2 for details regarding ASAM criteria.

Source: 1997 Missouri Household Telephone Survey.

**Table 6.14 ASAM Levels of Service Need among the Missouri Adult Household Population in Need of Treatment, by Age: 1997**

Level of Care	Adults Currently in Need of Treatment								
	18–34			35–54			55 and Older		
	%	95% CI	Number	%	95% CI	Number	%	95% CI	Number
Outpatient treatment (Level I)	39.3	31.9 – 47.2	71,700	38.6	30.5 – 47.5	52,900	*	*	*
Intensive outpatient (Level II)	42.1	34.6 – 49.9	76,800	43.0	34.6 – 51.9	59,000	*	*	*
Residential/inpatient treatment (Level III)	6.0	2.7 – 12.9	11,000	5.7	3.0 – 10.5	7,800	*	*	*
Medically managed intensive inpatient treatment (Level IV)	12.6	8.2 – 18.9	23,100	12.6	7.7 – 10.1	17,300	*	*	*

Note: See Chapter 2 for details regarding ASAM criteria.

\*Low precision; estimate not reported.

Source: 1997 Missouri Household Telephone Survey.

In comparison, of Missouri adults in need of treatment in 2001/2002, 56% were found to need outpatient treatment (Level I), 31% were in need of intensive outpatient treatment (Level II), 6% were in need of residential/inpatient treatment (Level III), and 8% were in need of medically managed intensive inpatient treatment (Level IV) (**Table 6.15**). Unlike the level of care distribution for adults in 1997, both males and females were most likely to need outpatient treatment (Level I) in 2001/2002. In addition, the level of care distribution was somewhat different by age (**Table 6.16**). In 2001/2002, the differences between adults aged 18 to 34 and those aged 35 to 54 were minimal. However, adults 55 and older were more likely to need outpatient treatment (Level I) (69%) and residential/inpatient treatment (Level III) (12%) than younger adults.

## 6.9 Summary

Highlights regarding problems with substance use and the need for treatment among adults in the Missouri household population in 2001/2002 include the following:

- # The prevalence of specific problems associated with alcohol use in the past 12 months were greater than the prevalence of problems associated with use of other drugs. However, this finding is not surprising, given the much higher prevalence of alcohol use.
- # The most commonly occurring alcohol-related problems in the 12 months prior to the 2001/2002 telephone survey were recurrent use in physically hazardous situations and used alcohol in larger amounts or for longer periods than intended.
- # About 3% of adults met criteria for past year alcohol or illicit drug dependence, and 6% met the criteria for alcohol or illicit drug abuse.
- # About 10% of adults in the Missouri adult household population in 2001/2002 were in need of substance abuse treatment, and 24% were in need of treatment or intervention.
- # Alcohol accounted for much of the need for treatment and treatment or intervention. Nearly all of adults in need of treatment specifically needed alcohol treatment. Of the 24% in need of treatment or intervention, 21% needed services specifically for alcohol.
- # Men were more likely than women, and young adults were more likely than older adults, to need treatment and treatment or intervention.

**Table 6.15 ASAM Levels of Service Need among the Missouri Adult Household Population in Need of Treatment, by Sex:  
2001/2002**

Level of Care	Adults Currently in Need of Treatment								
	Males			Females			Total		
	%	95% CI	Number	%	95% CI	Number	%	95% CI	Number
Outpatient treatment (Level I)	56.7	47.8 – 65.2	169,900	54.1	42.1 – 65.6	71,000	55.9	48.7 – 62.8	240,900
Intensive outpatient (Level II)	29.6	22.2 – 38.2	88,600	32.8	23.0 – 44.4	43,100	30.5	24.5 – 37.4	131,700
Residential/inpatient treatment (Level III)	7.1	3.9 – 12.6	21,200	3.2	0.9 – 11.3	4,300	5.9	3.4 – 10.0	25,400
Medically managed intensive inpatient treatment (Level IV)	6.7	3.3 – 13.0	20,100	9.9	4.5 – 20.5	13,000	7.7	4.6 – 12.7	33,100

Note: See Chapter 2 for details regarding ASAM criteria.

Source: 2001/2002 Missouri Household Telephone Survey.

**Table 6.16 ASAM Levels of Service Need among the Missouri Adult Household Population in Need of Treatment, by Age: 2001/2002**

Level of Care	Adults Currently in Need of Treatment								
	18–34			35–54			55 and Older		
	%	95% CI	Number	%	95% CI	Number	%	95% CI	Number
Outpatient treatment (Level I)	54.1	44.1 – 63.7	126,200	55.0	43.1 – 66.3	85,300	69.3	47.9 – 84.7	29,400
Intensive outpatient (Level II)	32.0	23.7 – 41.6	74,700	33.4	23.3 – 45.2	51,800	*	*	*
Residential/inpatient treatment (Level III)	4.4	2.0 – 9.5	10,300	6.6	2.6 – 15.8	10,200	11.5	3.4 – 32.5	4,900
Medically managed intensive inpatient treatment (Level IV)	9.5	4.9 – 17.8	22,200	5.1	1.9 – 12.8	7,900	7.1	1.7 – 24.7	3,000

Note: See Chapter 2 for details regarding ASAM criteria.

\*Low precision; estimate not reported.

Source: 2001/2002 Missouri Household Telephone Survey



- # About one-fifth of the adults in Missouri's household population who were in need of treatment indicated that they did not have health insurance coverage. Although about three-quarters of adults in need of treatment had private insurance, some of these adults may not have had insurance that covered substance abuse treatment, or their coverage may not have been adequate.
- # About 6% of the adults in need of treatment had a lifetime history of treatment in the form of detoxification, residential treatment, services in a halfway house, outpatient treatment, or methadone maintenance, suggesting little lifetime experience with formal treatment among substance abusers in Missouri.
- # Of the estimated 431,000 adults in need of treatment in the past year, only about 6,400 actually received detoxification, residential treatment, services in a halfway house, residential treatment, or methadone maintenance in the past year. Although this estimate is probably a conservative estimate of the number of adults in Missouri who received treatment services, this finding suggests a substantial difference between need for treatment and actual receipt of treatment services.
- # Approximately 23,000 Missouri residents self-reported an unmet need for formal or informal treatment services (i.e., wanted more services than received or did not receive services but wanted them). Although most Missouri adults who were identified as needing treatment did not appear to see the need for assistance, the data on demand for services suggest a considerable unmet demand for treatment services.

The estimates presented here are only for the Missouri household population. They do not cover other populations, such as homeless people, people who were incarcerated, people in households without telephones, or people without stable residences of their own. Estimates may be conservative because of potential difficulties in finding substance users at home in order to conduct the telephone interview, people's willingness to participate in a telephone interview, or their willingness to report over the telephone sensitive behaviors, such as alcohol- or other drug-related problems.

However, even if these estimates paint a somewhat conservative picture of the need for substance abuse treatment and receipt of services in Missouri, they nevertheless indicate that (a) a substantial number of adults are in need of treatment for their substance use, (b) the large majority of adults in need of treatment have never received formal treatment, and (c) a substantial number of adults who wanted treatment in the past year failed to get the treatment they wanted. These findings will be useful for treatment planners and treatment providers in identifying and helping to fill "gaps" in the treatment system's ability to meet the need for substance abuse treatment or other forms of assistance in Missouri.

## 7. Special Topics for Missouri Adults

In this chapter of special topics, findings are presented on (1) the prevalence of cigarette use among adult Missouri household residents, (2) substance use among women of childbearing age (18 to 55 years old) in the Missouri household population, and (3) pregnant women who were in need of treatment or intervention for substance use. Also presented is information about the prevalence of gambling, gambling problems, probable pathological gambling, and co-occurring substance use problems and pathological gambling. The data on these various topics provide a means of identifying these behaviors among the adult Missouri household population, as well as a baseline for observing any changes in these behaviors over time.

### 7.1 Tobacco Use by Missouri Adults

*More than 1 in 4 of Missouri adults, or 1,194,000 adults, smoked cigarettes in the past year, and more than 1 in 10 smoked heavily (596,100 adults).*

As shown in **Table 7.1**, nearly three-quarters of Missouri adults smoked cigarettes during their lifetime. Approximately 29% of adults smoked cigarettes at some point in the 12 months prior to the 2001/2002 survey, and 26% did so in the past month. These estimates translate to 1,194,000 adults who had smoked cigarettes in the past year and 1,059,000 who had smoked in the past month.

During the past year, 5% (or 208,000) of Missouri adults reported using smokeless or chewing tobacco, and 9% (or 386,000) reported smoking cigars. More than one-third of adults (or 1,469,000) reported some kind of tobacco use in the past year, the majority of which was cigarette use.

### 7.2 Cigarette Use

According to **Table 7.2**, a smaller percentage of Missouri adults were heavy smokers, defined as current smokers (smoked in the past month) who smoked one or more packs of cigarettes per day in the past month. The 2001/2002 survey revealed that 14% of all Missouri household adults were heavy smokers (596,100 adults).

With regard to percentages, residents who were most likely to smoke cigarettes in the past year lived in the southeast, were male, under the age of 55 (and particularly aged 18 to 24), Hispanic, widowed, divorced, or separated, less educated, or unemployed (**Table 7.2**). Most of these characteristics were the same for heavy smokers, except that adults 35 to 54 had the highest prevalence of heavy smoking among the various age groups. Several of these groups that had higher rates of past year cigarette use also had higher rates of heavy alcohol and illicit drug use in the past year (see Chapter 5).

**Table 7.1    Prevalence of Use and Estimated Numbers of Tobacco Users in the Missouri Adult Household Population: 2001/2002**

Type of Tobacco	Lifetime			Past Year			Past Month		
	%	Number (Thousands)	95% CI <sup>1</sup>	%	Number (Thousands)	95% CI <sup>1</sup>	%	Number (Thousands)	95% CI <sup>1</sup>
Cigarettes	74.8	3,117	72.9 – 76.6	28.7	1,194	26.8 – 30.7	25.5	1,059	23.6 – 27.4
Smokeless/chewing tobacco	–	–	–	5.0	208	4.1 – 6.1	–	–	–
Cigars	–	–	–	9.3	386	8.0 – 10.7	–	–	–
Any tobacco	–	–	–	35.3	1,469	33.2 – 37.4	–	–	–

– Not available.

<sup>1</sup> The 95% CI=95% confidence interval for the estimated percentage.

**Table 7.2 Prevalence of Use and Estimated Numbers of Past Year Cigarette Smokers (in Thousands) in the Missouri Adult Household Population, by Selected Demographic Characteristics: 2001/2002**

Demographic Characteristic	Any Cigarette Use <sup>1</sup>			Heavy Cigarette Use <sup>2</sup>		
	%	Number	95% CI <sup>3</sup>	%	Number	95% CI <sup>3</sup>
<b>Total Missouri</b>	28.7	1,194,100	1,114,600 – 1,276,900	14.3	596,100	536,100 – 661,600
<b>Region</b>						
Central	27.4	154,400	128,800 – 182,900	15.4	87,000	67,400 – 111,000
Eastern	27.0	397,900	347,800 – 452,200	12.7	187,600	151,300 – 231,100
Northwest	28.9	290,700	252,700 – 331,800	13.1	132,500	105,400 – 165,300
Southeast	32.0	161,400	138,500 – 186,100	16.7	84,600	67,400 – 105,100
Southwest	31.0	189,900	160,000 – 222,600	17.0	104,400	81,500 – 132,000
<b>Gender</b>						
Male	29.6	585,900	527,100 – 648,400	16.6	330,800	284,100 – 383,400
Female	28.0	608,200	555,800 – 663,500	12.2	265,300	229,400 – 305,900
<b>Age (years)</b>						
18–24	45.3	240,100	205,900 – 275,200	13.2	70,800	50,700 – 97,300
25–34	31.3	230,900	197,800 – 267,000	12.4	91,300	69,200 – 119,300
35–54	30.6	497,400	445,800 – 552,200	18.6	303,800	260,900 – 352,100
55 or older	17.9	225,600	194,300 – 260,800	10.3	130,100	106,600 – 158,100
<b>Race/Ethnicity</b>						
White	28.1	999,900	929,500 – 1,073,500	14.8	528,400	474,300 – 587,500
Black	29.8	124,300	93,700 – 160,000	9.1	38,200	20,100 – 69,700
Hispanic	42.6	32,000	20,800 – 44,400	20.0	15,000	7,000 – 28,200
Other <sup>4</sup>	34.4	37,800	27,700 – 49,400	13.1	14,500	8,900 – 22,900
<b>Marital Status</b>						
Single	39.4	269,900	232,300 – 309,400	13.0	90,100	65,100 – 122,700
Married/living as married	22.2	560,100	504,000 – 620,500	11.8	298,200	256,000 – 346,400
Widowed/divorced/separated	47.7	125,100	102,100 – 148,600	26.4	69,100	50,500 – 91,600
<b>Education</b>						
Less than high school	42.4	186,200	159,000 – 214,400	23.9	105,200	82,900 – 131,200
High school	32.3	441,400	394,100 – 491,500	18.2	249,800	211,000 – 293,800
Some college	31.5	354,500	312,400 – 399,500	12.8	144,000	117,000 – 176,200
College graduate or higher	17.2	210,000	176,900 – 247,900	7.9	96,200	73,600 – 125,000
<b>Student Status</b>						
In school	37.3	212,100	178,600 – 247,900	10.2	58,000	39,600 – 83,600
Not in school	27.4	981,800	910,500 – 1,056,400	15.0	537,900	481,800 – 599,400
<b>Current Employment</b>						
Full-time	30.8	682,300	623,300 – 744,300	15.7	349,300	304,200 – 399,700
Part-time	25.0	136,900	109,700 – 168,300	7.6	41,500	28,400 – 60,000
Unemployed <sup>5</sup>	49.9	51,700	38,000 – 65,400	31.5	32,600	21,600 – 46,100
Other <sup>6</sup>	25.0	321,700	280,400 – 366,800	13.3	171,300	139,300 – 209,300

Note: Unweighted numbers of respondents are shown in Table 3.1.

<sup>1</sup> Smoked cigarettes at least once in the past 12 months.

<sup>2</sup> Current smokers at the time of the survey who smoked one or more packs of cigarettes a day.

<sup>3</sup> The 95% CI = 95% confidence interval (in thousands) of the estimated numbers of cigarette users.

<sup>4</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

<sup>5</sup> Includes persons looking for work or not looking for work.

<sup>6</sup> Retired, disabled, homemaker, student, or “other.”

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 7.2** also shows the estimated numbers of cigarette users in different demographic subgroups. Although these data may be useful for those interested in identifying how many people were smokers within a particular group, readers should use the *percentages* rather than the estimated numbers for making comparisons across groups. These percentages take into account the number of cigarette smokers in a given subgroup relative to the overall size of that group in the entire adult household population. For example, an estimated 32,000 Hispanic adults smoked in the past year. However, that percentage translates into almost 43% of the Hispanic population.

Men were only somewhat more likely than women to smoke cigarettes in the past year (30% vs. 28%, respectively) and to smoke heavily (17% vs. 12%, respectively). In comparison, there were sizable differences between sexes in the rates of heavy alcohol use and use of illicit drugs (see **Tables 5.2** and **5.4**). The fact that cigarettes are legal for adults and perhaps more socially acceptable than either alcohol or illicit drugs might provide some explanation for these results.

*Rates of past year cigarette use were particularly high among adults aged 18 to 24 and Hispanics. Cigarette use was less prevalent among adults with a college education.*

As with alcohol and illicit drug use, the youngest residents (e.g., aged 18 to 24) were the most likely to use cigarettes in the past year (45%), and the eldest residents (e.g., 55 years or older) were the least likely to do so (18%). As noted previously, however, adults aged 35 to 54 were most likely to smoke heavily (19%). Among racial/ethnic groups, Hispanics were most likely to have smoked cigarettes in the past year and to have smoked heavily.

With respect to marital status, individuals who were widowed, divorced, or separated were most likely to use cigarettes in the past year (48%) and to smoke heavily (26%). Adults who were married or living as married were least likely to have smoked or to smoke heavily. Among different employment status groups, unemployed residents had the highest rate of any cigarette use (50%) and heavy cigarette use (32%) in the past year.

The prevalence of cigarette smoking was inversely related to educational attainment. That is, the higher the level of education, the lower the rate of any cigarette use and heavy cigarette use in the past year. About 42% of Missouri adults who had not completed high school were past year cigarette smokers, compared with only 17% of adults who had completed college. An estimated 24% of adults with less than a high school education smoked heavily in the past year compared with only 8% of adults with a college degree. This finding of a lower rate of cigarette use among Missouri adults with a college education or higher is consistent with 2001 NHSDA data showing considerably lower rates of cigarette use among adults with a college education and comparable rates of use among adults in the other educational levels (SAMHSA, 2002). The 2000 Behavioral Risk Factor Surveillance System data also show a decrease in current smokers by education level (CDC, 2001).

*One-quarter of adults in the Missouri household population described their physical health as being fair or poor.*

*Approximately 25% of Missouri adults reported fair or poor mental health.*

### 7.3 Physical and Mental Health Perception

**Table 7.3** presents findings on perceived physical and mental health. Telephone survey respondents were asked whether they perceived their physical health as being good, fair, or poor. A similar question regarding mental health also was asked.

The data in **Table 7.3** show that one-quarter of adult residents of Missouri perceived their physical health in the past year as being fair or poor. As might be expected, given that chronic conditions are often not manifest until later in life, adults in the Missouri household population who were 55 or older were more likely than adults under the age of 55 to perceive their health as fair or poor. Specifically, 36% of adults aged 55 or older perceived their health as being fair or poor compared with 20% of adults aged 18 to 24, 19% of adults aged 25 to 34, and 23% of adults aged 35 to 54.

The percentage of Missouri adults reporting fair or poor mental health was similar to that reporting fair or poor physical health (25%). Unlike physical health perception, however, mental health perception was higher among younger adults than older adults. Specifically, 33% of adults aged 18 to 24 reported fair or poor mental health compared with 21% of adults aged 25 to 34, 26% aged 35 to 54, and 22% of adults aged 55 or older.

Examination of perceived physical and mental health status and health problems according to people's substance use patterns is important for identifying any adverse effects of substance use on the health of Missouri adults. If heavy alcohol users and illicit drug users are more likely to experience certain health problems than are people who do not drink heavily or use illicit drugs, then primary care and substance abuse treatment services may need to be equipped to address both problems among substance abusers.

However, direct comparison of health perceptions and health problems according to people's substance use can be misleading. For example, as mentioned, older adults were more likely than younger adults to perceive that their physical health was fair or poor. Older adults also are more likely to report health problems, such as hypertension, heart problems, or digestive system problems. As was shown in Chapter 5, however, older adults also were less likely than younger adults to be heavy alcohol users or illicit drug users. Consequently, any relationship between substance use and health problems could be obscured or "confounded" by demographic differences between users and nonusers, or between heavy users and more moderate users.

To address this problem, multivariate analyses were conducted to examine the *independent* effects of heavy alcohol use and illicit drug use on a variety of health problems when the effects of selected

**Table 7.3 Perceptions of Physical Health, Medical Problems, and Mental Health among the Missouri Adult Household Population, by Age Group: 2001/2002**

Health Measure	Age Group								Total Missouri	
	18–24		25–34		35–54		55 or older			
	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>
Physical Health Perception										
Good	80.3	74.6 – 84.9	81.5	77.3 – 85.2	77.3	74.1 – 80.2	64.5	61.2 – 67.7	74.6	72.7 – 76.4
Fair or poor	19.7	15.1 – 25.4	18.5	14.8 – 22.7	22.7	19.8 – 25.9	35.5	32.3 – 38.8	25.4	23.6 – 27.3
Mental Health Perception										
Good	67.1	60.7 – 72.9	79.4	75.1 – 83.1	74.2	70.9 – 77.1	78.4	75.5 – 81.1	75.5	73.6 – 77.3
Fair or poor	32.9	27.1 – 39.3	20.6	16.9 – 24.9	25.8	22.9 – 29.1	21.6	18.9 – 24.5	24.5	22.7 – 26.4

<sup>1</sup> The 95% CI = 95% confidence interval for the estimate.

Source: Missouri Household Telephone Survey: 2001/2002.

demographic variables were taken into account. Specifically, logistic regression analyses modeled various health outcomes, such as whether someone perceived his or her physical or mental health as being fair or poor, as a function of age, sex, race/ethnicity, household income, cigarette use, alcohol use, and illicit drug use.

Results of the logistic regressions were expressed as odds ratios, or a comparison of the odds that persons in one group have the outcome of interest (fair or poor perceived physical or mental health) relative to persons in a designated reference group (see **Table 7.4**). For example, the odds of men having various health perceptions were compared with the odds that women had those same health perceptions. Stated another way, women were the “reference group” for comparisons by sex. If men had an odds ratio significantly greater than 1.00 for a given health perception, the result would mean that men had higher odds (were more likely) than women of having had that health perception. Conversely, if men had an odds ratio significantly lower than 1.00 for a perception, that would mean that men had lower odds (were less likely) than women of having had that health perception.

If the odds of a person having a particular health outcome (e.g., perceived health as fair or poor) in a comparison group (e.g., adults aged 18 to 24, 25 to 34, or adults aged 35 to 54) were significantly different from the odds of a person in the reference group (e.g., adults aged 55 or older) having this outcome, then the odds ratio would be significantly greater than 1.00 or significantly lower than 1.00. This is indicated by a 95% confidence interval that does *not* include 1.00 in the interval. Conversely, if 1.00 falls within the 95% confidence interval for an odds ratio, then that odds ratio is *not* significantly different from 1.00. Those situations where the odds ratios are significantly different from the reference group are indicated.

The data in **Table 7.4** show the results of analyses predicting whether people perceived their physical or mental health as being fair or poor according to selected demographic characteristics, patterns of cigarette and alcohol use, and use of illicit drugs. As might be expected, age and income level were significant predictors of whether Missouri adults in the household population perceived their health to be less than good.

Specifically, adults aged 18 to 54 were significantly less likely than adults aged 55 or older to perceive their physical health to be fair or poor, as indicated by odds ratios lower than 1.00. In contrast, adults aged 18 to 24 were significantly more likely than adults aged 55 or older to perceive their mental health as fair or poor. In particular, adults aged 18 to 24 and those 25 to 34 had less than half the odds of perceiving their physical health status to be fair or poor compared with adults aged 55 or older. Adults aged 35 to 54 had only half the odds of perceiving their physical health as fair or poor compared with older adults. Adults

*Adults aged 18 to 54 were significantly less likely than adults 55 years and older to perceive their physical health to be fair or poor.*



**Table 7.4 Demographic and Substance Use Correlates of Health Perceptions among the Missouri Adult Household Population: 2001/2002**

Characteristic	Perception of Physical Health <sup>1</sup>		Perception of Mental Health <sup>2</sup>	
	OR	95% CI <sup>3</sup>	OR	95% CI <sup>3</sup>
<b>Age (years)</b>				
18–24	0.4 <sup>a</sup>	0.3 – 0.6	1.8 <sup>a</sup>	1.3 – 2.5
25–34	0.4 <sup>a</sup>	0.3 – 0.6	0.9	0.7 – 1.3
35–54	0.5 <sup>a</sup>	0.4 – 0.7	1.3	1.0 – 1.6
55 or older	1.0	–	1.0	–
<b>Gender</b>				
Male	0.8	0.6 – 1.0	0.8	0.6 – 1.0
Female	1.0	–	1.0	–
<b>Race/Ethnicity</b>				
White	0.8	0.5 – 1.2	0.9	0.6 – 1.5
Black	0.9	0.4 – 2.0	1.2	0.6 – 2.5
Hispanic	1.3	0.9 – 1.9	1.1	0.7 – 1.6
Other <sup>4</sup>	1.0	–	1.0	–
<b>Income</b>				
No income information provided	1.8 <sup>a</sup>	1.3 – 2.7	1.2	0.8 – 1.7
Less than \$20,000	3.6 <sup>a</sup>	2.8 – 4.6	2.9 <sup>a</sup>	2.3 – 3.8
\$20,000–\$39,999	1.5 <sup>a</sup>	1.1 – 1.9	1.2	0.9 – 1.5
\$40,000 or more	1.0	–	1.0	–
<b>Cigarette Use</b>				
Current heavy use <sup>5</sup>	1.9 <sup>a</sup>	1.5 – 2.6	2.6 <sup>a</sup>	1.9 – 3.4
Current smoker, nonheavy use <sup>6</sup>	1.2	0.9 – 1.7	1.8 <sup>a</sup>	1.3 – 2.5
Use in past 12 months, but not currently using	0.9	0.5 – 1.6	1.7	1.0 – 3.0
No use in past 12 months	1.0	–	1.0	–
<b>Alcohol Use</b>				
Frequent heavy use, past 12 months <sup>7</sup>	0.7	0.4 – 1.3	1.5	0.8 – 2.8
Use in past 12 months, but not heavy use <sup>8</sup>	1.2	0.7 – 2.2	4.0 <sup>a</sup>	2.3 – 7.1
Lifetime use <sup>9</sup>	1.6 <sup>a</sup>	1.1 – 2.2	1.8 <sup>a</sup>	1.3 – 2.6
Lifetime nonuse	1.0	–	1.0	–
<b>Illicit Drug Use</b>				
Any use in past 12 months	1.5	1.0 – 2.2	3.2 <sup>a</sup>	2.2 – 4.5
Lifetime use <sup>10</sup>	1.0	0.8 – 1.3	1.8 <sup>a</sup>	1.5 – 2.3
Lifetime nonuse	1.0	–	1.0	–

Note: Data entries are expressed as odds ratios relative to a given reference group. Reference groups have odds ratios of 1.00.

OR = Odds Ratios.

– Not applicable.

<sup>a</sup> Significantly different from the reference group at the 95% confidence level.

<sup>1</sup> People who described their physical health as fair or poor.

<sup>2</sup> People who described their mental health as fair or poor.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>4</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

<sup>5</sup> Current smoker and smoke a pack or more of cigarettes a day.

<sup>6</sup> Current smoker and smoke less than a pack of cigarettes a day.

<sup>7</sup> For the past year, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week.

<sup>8</sup> Consumed alcohol in the past 12 months but not at the level defined in footnote 7.

<sup>9</sup> Used alcohol at least once in the lifetime but not in the past 12 months.

<sup>10</sup> Used illicit drugs at least once in the lifetime but not in the past 12 months.

Source: Missouri Household Telephone Survey: 2001/2002.

18 to 24 were 1.8 times as likely to perceive their mental health to be fair or poor compared with adults older than age 55.

*Adults in households for which income information was not available and those in households earning less than \$40,000 annually were significantly more likely to perceive their physical health to be fair or poor than adults in households with annual incomes of \$40,000 or more.*

Adults for whom income information was not available and those in households earning less than \$40,000 annually were significantly more likely to perceive their physical health as fair or poor compared with adults in households with annual incomes of \$40,000 or more. In particular, adults in households with annual incomes less than \$20,000 were 3.6 times as likely to perceive their physical health as being fair or poor compared with adults in households with incomes of \$40,000 or more. Low income was also a predictor of poor mental health perceptions. Respondents who reported incomes of less than \$20,000 were 2.9 times as likely to report fair or poor mental health than those earning \$40,000 or more per year. The analyses showed that gender and race/ethnicity were not significant predictors of fair or poor perceived physical or mental health status when such factors as age and income were taken into account.

Consistent with medical research (Office on Smoking and Health, 1989) indicating the harmful effects of smoking, data show that current heavy smokers (i.e., those who smoke a pack or more of cigarettes daily) were more likely to perceive themselves as having poor or fair physical and mental health. Specifically, current heavy smokers were 1.9 times as likely as past year nonsmokers to perceive less than good physical health and 2.6 times as likely as past year nonsmokers to perceive fair or poor mental health. In addition, current smokers who were not heavy smokers were 1.8 times as likely as past year nonsmokers to report fair or poor mental health.

There was only one significant difference in perceived physical health status and two significant differences in perceived mental health status according to level of alcohol use. Adults who reported using alcohol at least once in their lifetime were 1.6 times as likely as lifetime nonusers to report fair or poor physical health and 1.8 times as likely to report fair or poor mental health. In addition, persons who had used alcohol at some time in the past year, but not heavily, were about 4.0 times as likely as persons who had never drunk alcohol in their lifetime to perceive their mental health to be fair or poor.

*Missouri adults who used illicit drugs in the past year were more than three times as likely as those who had never used illicit drugs to report that their mental health was fair or poor.*

Missouri adults in the household population who used illicit drugs in the past 12 months were significantly more likely than lifetime nonusers to perceive their mental health as being fair or poor. In particular, persons who used illicit drugs in the 12 months before the survey were 3.2 times as likely to perceive fair or poor mental health as persons who had never used illicit drugs in their entire life. In addition, adults who reported lifetime illicit drug use were 1.8 times as likely as lifetime nonusers to report fair or poor mental health.

The occurrence of other medical problems among people in need of substance abuse treatment has important implications both for primary care and substance abuse treatment providers. On the primary care side, if a person presenting in a primary care setting with a medical complaint has an underlying substance abuse problem, then failure to identify and address that problem may limit the effectiveness of the medical treatment. Similarly, medical or psychological issues among substance abuse treatment clients, rather than “denial” or “not working the program,” may sometimes explain noncompliance or failure to respond to treatment.

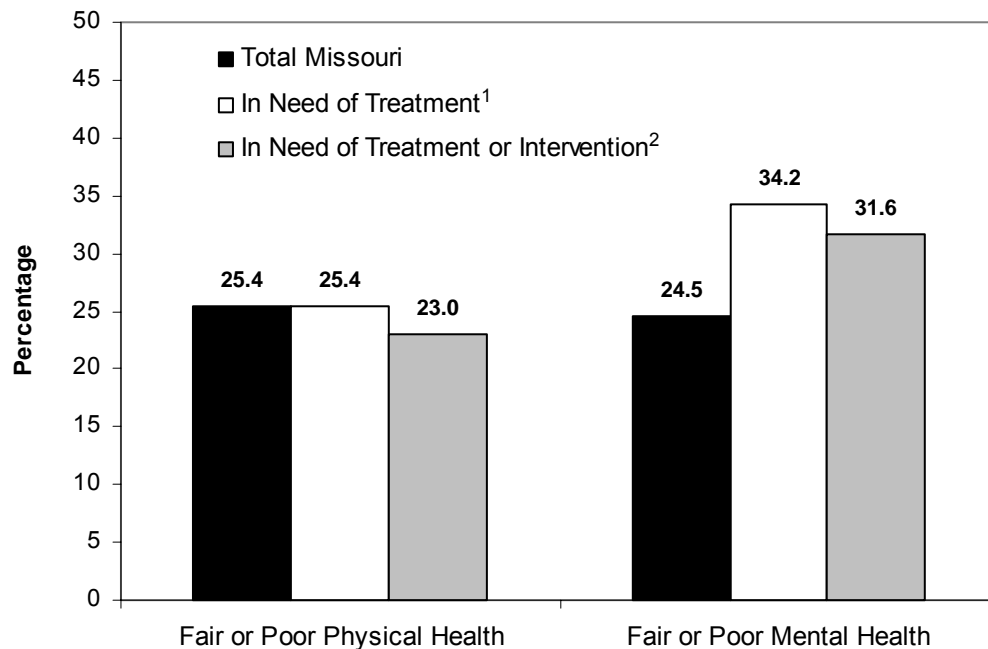
**Figure 7.1** provides information on the perceptions of physical health and of specific medical conditions among Missouri adults in the household population and those who were in need of substance abuse treatment and treatment or intervention in the 12 months before the survey. Although the large majority of adults in all three groups perceived their physical health to be good, one in four adults in general (25%) perceived their health to be fair or poor. The same percentage of adults in need of treatment for substance abuse and a slightly smaller proportion of adults in need of treatment or intervention (23%) perceived their health to be fair or poor.

*One-third of Missouri adults who needed substance abuse treatment perceived their mental health as being fair or poor, compared with less than one-quarter of adults in the Missouri household population as a whole.*

In contrast to the general lack of a relationship between the need for substance abuse treatment and perceptions of fair or poor physical health, there was a clear relationship between need for treatment and perceptions of fair or poor mental health, as shown in **Figure 7.1**. Compared with 25% of the overall Missouri adult household population who perceived their mental health as being fair or poor, 34% of adults in need of substance abuse treatment and 32% of adults in need of treatment or intervention reported fair or poor mental health. These results from the Missouri household population support other studies suggesting that substance abuse disorders often co-occur with other mental health problems (Regier et al., 1990; SAMHSA, 2002). Note, however, that perception of poor mental health does not necessarily indicate the presence of a diagnosable mental disorder.

Information is presented in **Table 7.5** on the use of medication to control emotional problems in relation to perceptions of health by adults in need of substance abuse treatment. Approximately 10% of adults in need of substance abuse treatment who perceived their physical health as good reported using medication to control emotional problems. The same percentage of adults in need of treatment who reported fair or poor physical health reported using medication to control emotional problems. In contrast, adults in need of substance abuse treatment who perceived their mental health as fair or poor were significantly more likely to report the use of medication to control emotional problems than adults in need of treatment who perceived their mental health as good (15% vs. 9%, respectively). Adults in need of substance abuse treatment or intervention who perceived their mental health as fair or

**Figure 7.1 Percentages of the Missouri Adult Household Population Reporting Fair or Poor Physical and Mental Health: 2001/2002**



<sup>1</sup> Includes people who (a) received formal treatment in the past 12 months, or (b) met lifetime *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>2</sup> Includes people who (a) were determined to need treatment (as described in footnote 1) or (b) never met *DSM-IV* (1994) criteria for abuse or dependence for any drugs covered in the telephone survey, but who nevertheless had one or more symptoms in the past 12 months or had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

Source: Missouri Household Telephone Survey: 2001/2002.

poor were also significantly more likely than those reporting good mental health to report using medication to control emotional problems (32% vs. 22%, respectively).

## 7.4 Substance Use among Women of Childbearing Age

The 2001/2002 Missouri Household Telephone Survey included a question for women between the ages of 18 and 54 regarding whether they had been pregnant in the 12 months before the survey. **Table 7.6** shows that 10% of women aged 18 to 54 reported being pregnant in the past year. This translates into approximately 151,000 women. Approximately one-fifth of women aged 18 to 34 reported being pregnant in the past year, whereas less than 2% of women 35 to 54 reported a past year pregnancy.

*Approximately 10% of women aged 18 to 54 reported being pregnant in the past year.*

Although women who were pregnant in the past year were not specifically asked whether they had used alcohol or other drugs during that pregnancy, these survey data provide information on past year

**Table 7.5 Perceptions of Mental Health and Pharmacological Interventions for Mental Health Problems According to Substance Abuse Treatment Need in the Past Year in Missouri: 2001/2002**

Health Measure	Need for Treatment <sup>1</sup>		Need for Treatment or Intervention <sup>2</sup>	
	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>
<b>Perception of Physical Health</b>				
Good	10.4	8.8 – 12.1	25.3	23.1 – 27.6
Fair or poor	10.3	7.9 – 13.5	22.1	18.6 – 26.1
<b>Perception of Mental Health</b>				
Good	9.0	7.6 – 10.7	22.2	20.1 – 24.4
Fair or poor	14.5	11.7 – 17.9	31.6	27.6 – 35.9

<sup>1</sup> Need for treatment related to use of alcohol or other drugs. Criteria for establishing need for treatment are discussed in Chapter 2.

<sup>2</sup> Includes people described in footnote 1, as well as people who (a) received intervention services in the past year or (b) never met *DSM-IV* (1994) criteria for dependence or abuse, but who had one or more symptoms in the past 12 months or had a problem pattern of use. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimate.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 7.6 Estimated Percentage and Number of Women of Childbearing Age Reporting Being Pregnant in the Past Year in Missouri: 2001/2002**

Age	%	Number	95% CI <sup>1</sup>
18–24 years	20.0	53,500	36,800 – 75,200
25–34 years	22.5	83,600	65,400 – 105,100
35–54 years	1.7	13,700	6,700 – 27,600
Total	10.3	150,700	122,400 – 184,700

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated number.

Source: Missouri Household Telephone Survey: 2001/2002.

substance use among women of childbearing age, and particularly among women who were pregnant in the past year. **Table 7.7** shows the prevalence of use of different substances in the year before the survey among women aged 18 to 54. **Figure 7.2** shows the prevalence of substance use among women who were pregnant in the past year. Again, however, readers are reminded that these latter estimates do not measure actual substance use during pregnancy.

Among women of childbearing age, those aged 18 to 24 had the highest rates of substance use in the past year. In particular, 25% of women in this age group used marijuana, hallucinogens, cocaine (in any form), heroin/opiates, inhalants, prescription drugs (nonmedically) or methamphetamines in the past year. Although a comparable percentage

**Table 7.7 Prevalence of Substance Use in the Past Year among Women of Childbearing Age in Missouri: 2001/2002**

Substance Used	Women/Age Group (Years)					
	18–24		25–34		35–54	
	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>
<b>Any Illicit Drug Use<sup>2</sup></b>	24.5	17.9 – 32.6	8.0	5.1 – 12.3	8.9	6.5 – 12.1
Marijuana	21.4	15.1 – 29.4	5.7	3.3 – 9.8	4.0	2.4 – 6.3
Hallucinogens	3.7	1.6 – 8.4	*	*	**	**
Cocaine	4.3	1.7 – 10.6	*	*	0.3	0.1 – 1.1
Heroin/opiates	1.8	0.6 – 5.3	0.3	0.0 – 1.8	0.4	0.1 – 1.5
Inhalants	*	*	**	**	**	**
Nonmedical prescription drugs <sup>3</sup>	9.3	5.4 – 15.5	3.3	1.7 – 6.3	5.5	3.7 – 8.2
Methamphetamines	6.8	3.6 – 12.5	0.8	0.2 – 3.3	0.6	0.2 – 2.0
<b>Alcohol</b>						
Any alcohol use	76.5	68.8 – 82.8	71.0	65.0 – 76.4	68.0	63.4 – 72.3
Heavy alcohol use <sup>4</sup>	15.3	9.4 – 24.0	4.8	2.6 – 8.7	4.9	3.1 – 7.6
<b>Cigarettes</b>						
Any cigarette use	44.9	36.4 – 53.7	30.1	24.6 – 36.2	30.5	26.4 – 35.0
Current heavy cigarette use <sup>5</sup>	10.4	6.2 – 16.9	10.2	7.0 – 14.5	15.8	12.7 – 19.4

<sup>1</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>2</sup> Defined as use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, methamphetamines, or nonmedical use of any prescription drug.

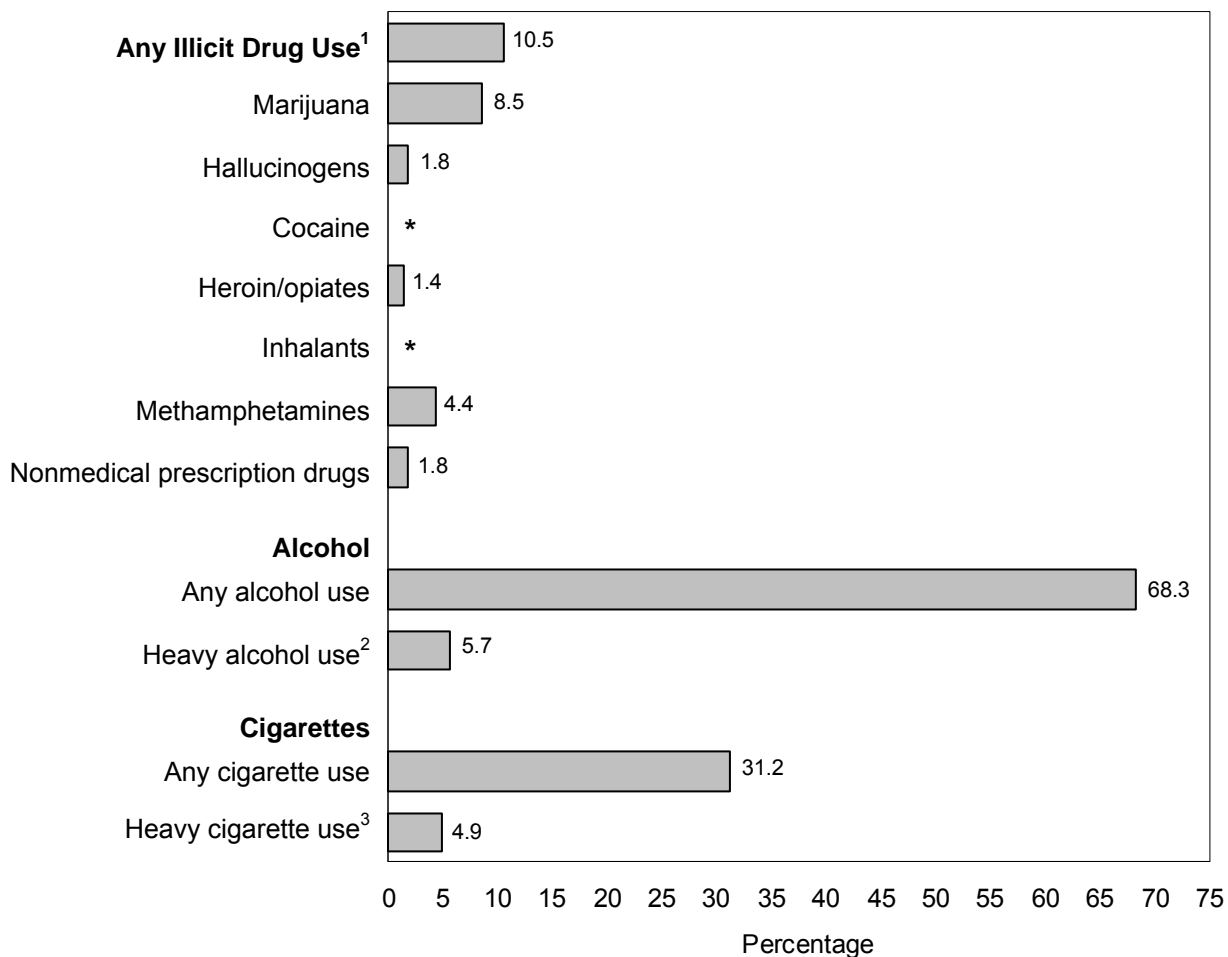
<sup>3</sup> Nonmedical use is defined as use for reasons other than prescribed, in larger amounts than prescribed, more often than prescribed, or without a prescription.

<sup>4</sup> For the past year, defined for women as weekly consumption of four or more drinks in a 24-hour period, or typical consumption of four or more drinks on 4 or more days in the past month.

<sup>5</sup> Current smokers at the time of the survey who smoked one or more packs of cigarettes a day.

Source: Missouri Household Telephone Survey: 2001/2002.

**Figure 7.2 Prevalence of Substance Use in the Past Year among Missouri Women Who Were Pregnant in the Past Year: 2001**



\*Low precision; no estimate reported.

<sup>1</sup> Defined as use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants or methamphetamines, or nonmedical use of any psychotherapeutics.

<sup>2</sup> For the past year, defined for women as weekly consumption of four or more drinks in a 24-hour period, or typical consumption of four or more drinks on 4 or more days in the past month.

<sup>3</sup> Current smokers at the time of the survey who smoked one or more packs of cigarettes a day.

Source: Missouri Household Telephone Survey: 2001/2002.

of women in this age group used marijuana in the past year (21%), about 7% used methamphetamines, 4% used cocaine, and nearly 4% used hallucinogens. An estimated 15% of women in this age group were heavy alcohol users in the past year, based on consumption of four or more drinks per occasion on a weekly or more frequent basis.

In comparison, 8% of women aged 25 to 34 and 9% of women aged 35 to 54 were past year users of any of the illicit drugs covered in the telephone survey. In addition, the rates of heavy alcohol use among

women aged 25 to 34 (5%) and 35 to 54 (5%) were one-third the rate for women aged 18 to 24 (15%).

Cigarette use was much more prevalent compared with heavy alcohol use or use of other drugs. Nearly 45% of women aged 18 to 24 smoked cigarettes in the year before the 2001/2002 survey, as did 30% of women aged 25 to 34 and 31% women aged 35 to 54. About 10% to 16% of women in these three age groups were current heavy cigarette smokers, meaning that they smoked one or more packs of cigarettes a day at the time of the survey. Rates of heavy cigarette use did not vary significantly by age group for women of childbearing age.

*Among women in the Missouri adult household population who were pregnant in the past year, 11% used illicit drugs in the past year, and 6% were heavy alcohol users.*

Among women in the Missouri adult household population who were pregnant in the year before the survey, an estimated 11% were past year users of one or more illicit drugs covered in the telephone survey, including 9% who used marijuana (**Figure 7.2**).

Interestingly, a smaller percentage of women who were pregnant in the past year were heavy alcohol users (6%) compared with the percentage who used illicit drugs in the past year. One possible explanation is that for a woman to be defined as a heavy drinker, she had to have drunk heavily on a regular basis in the past year. Many women probably cut down on their drinking or stopped drinking entirely once they knew they were pregnant and did not have four or more drinks frequently enough (if at all) to be classified as a heavy drinker. However, 68% of women who were pregnant in the past year drank some alcohol.

In contrast, women were defined as using alcohol or illicit drugs if they ever used these substances during the past 12 months, even if only once. Because the past 12 months is longer than the period in which these women were pregnant, it is possible that use of these other substances may have occurred before or after pregnancy. Nevertheless, the finding that 6% of women who were pregnant in the past 12 months had four or more drinks per day on a fairly regular basis (i.e., once a week or more often) in the past 12 months is cause for concern because of the risks for fetal alcohol syndrome.

*About 5% of women who were pregnant in the past year were current heavy smokers.*

In addition, about 31% of women who were pregnant in the past year smoked cigarettes at least once during that same time period, although not necessarily while they were pregnant. Approximately 5% of women who were pregnant in the past year were heavy cigarette smokers. Given the level of current cigarette smoking that was required to define someone as a heavy smoker (i.e., one or more packs of cigarettes a day), many of these women may have smoked during or throughout their pregnancies. This finding may be cause for concern because of the association between cigarette smoking during pregnancy and low birthweight or preterm delivery.



Although the telephone survey was not specifically designed to measure substance use during pregnancy, these findings do indicate that sizable percentages of women of childbearing age in Missouri were smokers in the past year, and sizable percentages of younger women were heavy drinkers or used drugs other than alcohol in the past year. Even if women who became pregnant cut down sharply on their substance use or stopped altogether once they knew they were pregnant, a number of these women could still have used drugs after they became pregnant but before they were aware of it. Of particular concern are the percentages of women who were pregnant in the past year who also drank heavily during the past year or were current heavy cigarette smokers. These results underscore the importance of educational and outreach efforts in the state to encourage women to quit smoking, to abstain from alcohol or reduce their alcohol consumption sharply, and to stop their use of illegal drugs if they are intending to become pregnant.

**Table 7.8** focuses on the percentages of women who were pregnant in the year before the survey and who were in need of treatment or intervention for their substance use. (See Chapter 2 for details on how treatment need was defined for this report.)

*About 5% of women who were pregnant in the past year needed substance abuse treatment, and 24% needed substance abuse treatment or intervention.*

About 5% of women in the Missouri adult household population who were pregnant in the past year were identified as needing treatment for either alcohol or illicit drug use. This estimate translated to approximately 7,700 women who were pregnant in the past year and were in need of treatment. An estimated 24% of women who were pregnant in the past year (or 35,300 women) were estimated to need treatment or intervention for alcohol or illicit drug use. Almost one-fifth needed treatment or intervention specifically for alcohol (25,700 women), and 7% needed treatment or intervention for illicit drug use (9,800 women).

These results suggest that sizable numbers of adult pregnant women in Missouri may be in need of either treatment or some type of services related to their substance use. Moreover, these estimates are certainly conservative, in that they do not include pregnant women under the age of 18 who may have needed substance abuse services. Nevertheless, these findings point to potentially tremendous benefits for these mothers and their unborn children—as well as broader benefits to society as a whole—if substance abuse treatment services are readily available to pregnant women in Missouri who want them. In particular, efforts to decrease access barriers to prenatal care, combined with efforts to screen women for substance abuse problems when they present for prenatal care, could provide an opportunity to intervene with substance-abusing pregnant women. In addition, the high percentage of women who were pregnant in the past year who also smoked cigarettes during that time period (**Figure 7.2**) could suggest the need for services to help women stop smoking during pregnancy, even if they do not use alcohol or other drugs.

**Table 7.8 Estimated Numbers of Missouri Adult Women Pregnant in the Past Year Who Were in Need of Alcohol or Illicit Drug Treatment or Intervention: 2001/2002**

Measure	%	Number (Thousands)	95% CI <sup>1</sup>
<b>In Need of Treatment<sup>2</sup></b>			
Alcohol or illicit drugs	5.1	7,700	2,900 – 19,300
Alcohol	5.1	7,700	2,900 – 19,800
Any illicit drugs <sup>3</sup>	1.2	1,800	300 – 12,100
<b>In Need of Treatment or Intervention<sup>4</sup></b>			
Alcohol or illicit drugs	23.6	35,300	22,300 – 52,600
Alcohol	17.2	25,700	14,700 – 42,200
Any illicit drugs <sup>3</sup>	6.5	9,800	3,900 – 22,900

\*\*Estimate rounds to fewer than 1,000 people.

<sup>1</sup> The 95% CI = 95% confidence interval (in thousands) of the estimated numbers of users.

<sup>2</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>3</sup> Defined as marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines, or nonmedical use of any psychotherapeutics.

<sup>4</sup> Includes people who (a) were determined to need treatment (as described in footnote 2) or (b) never met *DSM-IV* (1994) criteria for abuse or dependence for any drugs covered in the telephone survey, but who nevertheless had one or more symptoms in the past 12 months or had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

Source: Missouri Household Telephone Survey: 2001/2002.

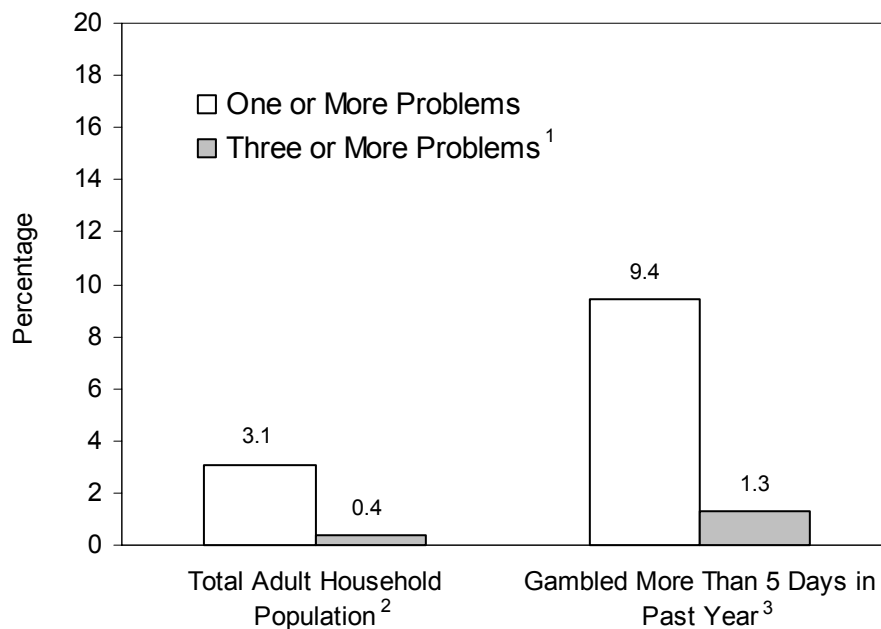
## 7.5 Gambling among Missouri Adults

This section presents findings on the prevalence of gambling, gambling problems, and probable pathological gambling among Missouri adults aged 18 or older. Also presented is information about the co-occurrence of substance use and problem or pathological gambling. These gambling data identify the extent and characteristics of problems related to gambling in the state. The data also provide a baseline for observing the prevalence of problem or pathological gambling in Missouri.

*About 3% of the Missouri adult household population had one or more lifetime gambling problem. Less than 1% of Missouri adults could be considered probable pathological gamblers.*

**Figure 7.3** presents summary information on the percentages of adults who had one or more gambling problems or three or more gambling problems in their lifetime. The data are broken out for the entire adult household population and for those who gambled on more than 5 days during the year before the survey.<sup>1</sup> About 3% of the total adult household population had one or more lifetime gambling problems. **Table 7.9** presents the prevalence of Missouri adult household residents

<sup>1</sup> Those respondents who gambled on 5 or fewer days in the past 12 months (including respondents who did not gamble at all in the past 12 months) were not asked the questions about lifetime gambling problems.

**Figure 7.3 Prevalence of Lifetime Gambling Problems among Missouri Adults: 2001/2002**

<sup>1</sup> Occurrence of three or more problems indicates probable pathological gambling.

<sup>2</sup> Based on a total sample size of 4,616 respondents. However, respondents who gambled 5 days or less in the past year ( $n=3,169$ ) were not asked these questions.

<sup>3</sup> Based on a sample size of 1,447 respondents. This group also includes people who did not know how often they gambled or who refused to indicate how often they gambled in the past year.

Source: Missouri Household Telephone Survey: 2001/2002.

who had selected problems with gambling in their lifetime. The problems cited most were “went back to try to win back money lost” (2.3%), “increased preoccupation with gambling” (1%), and “needed to gamble with increased amounts of money to achieve desired level of excitement” (0.9%). Less than 1% of Missouri adults had three or more gambling-related problems in their lifetime.

*Among Missouri adults who gambled on more than 5 days in the past year, 9% had one or more lifetime gambling problems, and 1% could be considered probable pathological gamblers.*

Among those who gambled on more than 5 days in the past year, 9% had one or more problems, and 1% could be considered probable pathological gamblers, based on the occurrence of three or more lifetime gambling problems (**Figure 7.3**). Again, the most common problems among this group of more frequent gamblers were “went back to try to win back money lost” (7%), “increased preoccupation with gambling” (2.9%), and “needed to gamble with increased amounts of money to achieve desired level of excitement” (2.6%). Taken together, these findings from **Table 7.9** and **Figure 7.3** suggest that rates of pathological gambling among Missouri adults were low, even among adults who gambled on more than just a few days in the past year.

**Table 7.9 Prevalence of Lifetime Gambling Problems among Missouri Adults: 2001/2002**

Gambling Problem	Total Adult Household Population <sup>1</sup>		Gambled More Than 5 Days in Past Year <sup>2</sup>	
	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>
Increased preoccupation with gambling	1.0	0.6 – 1.5	2.9	1.9 – 4.4
Needed to gamble with increased amounts of money to achieve desired level of excitement	0.9	0.5 – 1.4	2.6	1.6 – 4.2
Restless or irritable when unable to gamble	0.3	0.1 – 0.6	0.9	0.4 – 1.8
Gambled to escape from problems	0.4	0.2 – 0.8	1.2	0.6 – 2.3
Went back to try to win back money lost	2.3	1.7 – 3.2	7.0	5.2 – 9.3
Lied to others about extent of gambling	0.3	0.2 – 0.7	1.0	0.5 – 2.0
Jeopardized or lost important relationships, jobs, or career opportunities because of gambling	**	**	0.1	0.0 – 0.6
Someone provided money to relieve financial problems caused by gambling	0.2	0.1 – 0.4	0.5	0.2 – 1.3

\*\*Estimated percentage rounds to zero.

<sup>1</sup> Based on a total sample size of 4,616 respondents. However, respondents who gambled 5 days or less in the past year ( $n=3,169$ ) were not asked these questions.

<sup>2</sup> Based on a sample size of 1,447 respondents. This group also includes people who did not know how often they gambled or who refused to indicate how often they gambled in the past year.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimate.

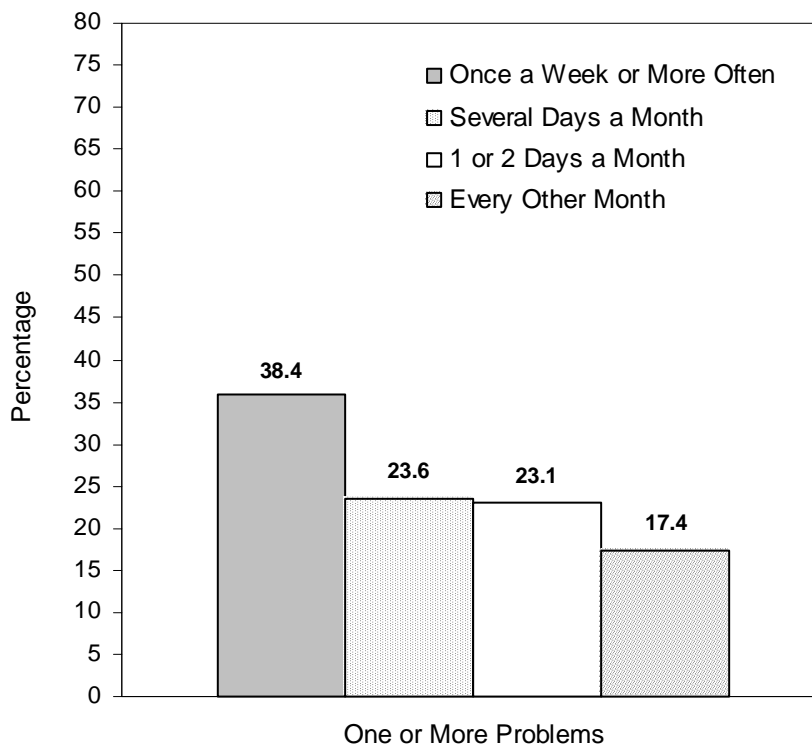
Source: Missouri Household Telephone Survey: 2001/2002.

**Figure 7.4** compares the occurrence of gambling-related problems according to how often Missouri adults gambled in the year prior to the survey. Adults who gambled every other month in the year before the survey had lower rates of any lifetime gambling problems compared with adults who gambled more frequently. In particular, 38% of adults who gambled once a week or more often in the past year, about 24% of adults who gambled several days a month, and 23% of adults who gambled 1 or 2 days a month had at least one lifetime gambling problem.

### 7.5.1 Demographic Correlates of Pathological Gambling

As noted previously, probable pathological gambling was defined according to the occurrence during one's lifetime of three or more of the gambling problems listed in **Table 7.9**. **Table 7.10** presents the prevalence of probable pathological gambling among different demographic subgroups of Missouri adults. Findings are presented for the household population as a whole and for adults who gambled on more than 5 days in the past year. However, significant differences were not present.

**Figure 7.4 Frequency of Past Year Gambling among Missouri Adults, by Number of Lifetime Gambling Problems: 2001/2002**



Note: Data on three or more problems (pathological gambling) are not present due to low precision.

Source: Missouri Household Telephone Survey: 2001/2002.

*About 2% to 3% of past year heavy alcohol users or illicit drug users in Missouri were probable pathological gamblers.*

Both for the adult household population as a whole and for adults who gambled on more than 5 days in the past year, the prevalence of probable pathological gambling among males and single (i.e., never married) adults tended to be higher than that for females and married adults or for adults who were widowed, divorced, or separated. In particular, 2% of males and 2.5% of single adults who gambled on more than 5 days in the past year could be considered probable pathological gamblers, compared with 0.9% of females and 1.2% of adults who were married or living as married. In addition, about 2% of adults aged 18 to 24 and 2% of those 35 to 54 who gambled on more than 5 days in the past year could be considered probable pathological gamblers, compared with less than 1% of adults in other age groups. Other groups that had higher rates of probable pathological gambling included full-time employed adults.

### 7.5.2 Pathological Gambling and Substance Use

To evaluate the extent to which pathological gambling and substance use were related in this population, the prevalence of pathological gambling among residents who drank heavily, used illicit drugs, or were

**Table 7.10 Prevalence of Lifetime Pathological Gambling in the Missouri Adult Household Population, by Selected Demographic Characteristics: 2001/2002**

Demographic Characteristic	Pathological Gambling <sup>1</sup>			
	Total Adult Household Population <sup>2</sup>		Gambled More Than 5 Days in Past Year <sup>3</sup>	
	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>
<b>Total Missouri</b>	0.4	0.2 – 0.8	1.3	0.7 – 2.4
<b>Region</b>				
Central	0.4	0.1 – 2.4	1.1	0.2 – 7.0
Eastern	0.2	0.1 – 0.8	0.7	0.2 – 2.2
Northwest	1.0	0.4 – 2.3	2.9	1.2 – 6.5
Southeast	0.1	0.0 – 1.0	0.4	0.1 – 3.1
Southwest	0.4	0.1 – 2.3	1.2	0.2 – 7.7
<b>Gender</b>				
Male	0.6	0.3 – 1.3	1.8	0.8 – 3.7
Female	0.3	0.1 – 0.7	0.9	0.3 – 2.3
<b>Age (years)</b>				
18–24	0.8	0.3 – 2.8	2.0	0.6 – 6.6
25–34	0.2	0.0 – 1.4	0.6	0.1 – 4.2
35–54	0.7	0.3 – 1.5	1.9	0.8 – 4.1
55 or older	0.1	0.0 – 0.8	0.5	0.1 – 2.8
<b>Race/Ethnicity</b>				
White	0.4	0.2 – 0.7	1.1	0.6 – 2.2
Black	0.7	0.1 – 3.9	2.0	0.3 – 10.7
Hispanic	2.7	0.4 – 15.7	*	*
Other <sup>5</sup>	0.2	0.0 – 3.4	*	*
<b>Marital Status</b>				
Single	1.0	0.3 – 2.8	2.5	0.9 – 6.9
Married/living as married	0.4	0.2 – 0.9	1.2	0.5 – 2.8
Widowed/divorced/separated	*	*	*	*
<b>Education</b>				
Less than high school	*	*	*	*
High school	0.8	0.3 – 1.7	2.1	1.0 – 4.6
Some college	0.1	0.0 – 0.6	0.2	0.0 – 1.7
College graduate or higher	0.6	0.2 – 1.6	1.9	0.7 – 5.1
<b>Student Status</b>				
In school	0.3	0.0 – 2.4	1.0	0.1 – 6.6
Not in school	0.5	0.2 – 0.9	1.4	0.7 – 2.6
<b>Current Employment</b>				
Full-time	0.7	0.3 – 1.3	1.8	0.9 – 3.5
Part-time	0.3	0.1 – 1.5	1.0	0.2 – 4.9
Unemployed <sup>6</sup>	*	*	*	*
Other <sup>7</sup>	0.1	0.0 – 0.8	0.5	0.1 – 2.8

Note: Unweighted numbers of respondents are shown in Table 3.1.

<sup>1</sup> Report of three or more gambling problems.

<sup>2</sup> Based on a total sample size of 4,606 respondents. However, respondents who gambled 5 days or less in the past year (n=3,158) were not asked these questions.

<sup>3</sup> Based on a sample size of 1,448 respondents. This group also includes people who did not know how often they gambled or who refused to indicate how often they gambled in the past year.

<sup>4</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>5</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

<sup>6</sup> Includes persons looking for work or not looking for work.

<sup>7</sup> Retired, disabled, homemaker, student, or “other.”

Source: Missouri Household Telephone Survey: 2001/2002.

in need of treatment for these substances was evaluated (see **Table 7.11**). About 19% of past year heavy alcohol users and 21% of illicit drug users in the adult household population had one or more lifetime gambling problems. More than one-quarter (28%) of adults in need of substance abuse treatment and more than one-third (37%) in need of treatment or intervention had one or more lifetime gambling problems.

## 7.6 Summary

This chapter reviewed the data on cigarette use among Missouri adults, perceptions of physical and mental health, and substance use and need for substance abuse treatment among women of childbearing age (and those who had been pregnant in the year before the survey). The chapter also examined gambling-related problems among adult Missouri household residents.

Cigarette use was relatively common among these residents. More than one-quarter of Missouri adults, or nearly 1,194,000 adults, smoked cigarettes in the year prior to the 2001/2002 survey. Although men were somewhat more likely than women to have smoked in the past year, the difference in rates of smoking between men and women was not as great as the sex differences observed for heavy alcohol use and illicit drug use. Rates of cigarette use were particularly high among adults aged 18 to 24. Cigarette use was less prevalent among adults with a college education compared with adults with less education.

Adults who used illicit drugs in the past year were 3.2 times as likely to perceive fair or poor mental health compared with persons who had never used illicit drugs in their entire life. Adults who reported lifetime illicit drug use were 1.8 times as likely as lifetime nonusers to report fair or poor mental health. Compared with 25% of the overall adult household population, 34% of adults in need of substance abuse treatment, and 32% in need of treatment or intervention, reported fair or poor mental health.

Among women who were pregnant in the year before the 2001/2002 survey, about 11% used illicit drugs in the past year. In addition, about 6% of women who were pregnant in the past year had four or more drinks on a weekly or more frequent basis in the past year, 31% smoked cigarettes at some point in the past year, and 5% were current heavy smokers (defined as smoking a pack or more of cigarettes a day). However, these results do not necessarily mean that these women used these substances during or throughout their pregnancy. Nevertheless, the findings that about 6% of these women drank heavily in the past year and about 5% were current heavy smokers suggest that a considerable number of these women may have continued to use alcohol or smoke cigarettes during at least part of their pregnancy.

**Table 7.11 Substance Use and Treatment Need in the Past Year, by Problem Gambling: 2001/2002**

Measure	Problem Gambling <sup>1</sup>		
	%	Number	95% CI <sup>2</sup>
Heavy alcohol use <sup>3</sup>	18.7	237,000	137 – 384,000
Any illicit drug use <sup>4</sup>	21.1	277,000	166,000 – 434,000
Need for treatment for alcohol or other drug use <sup>5</sup>	28.2	368,000	236,000 – 536,000
Need for treatment or intervention for alcohol or other drug use <sup>6</sup>	37.2	485,000	338,000 – 652,000

Note: Data for pathological gambling are not presented because of low precision.

<sup>1</sup> Report of one or more problems indicates problem gambling.

<sup>2</sup> The 95% CI = 95% confidence interval (in thousands) for the estimated numbers of people.

<sup>3</sup> For the past year, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month. For the past month, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period on 4 or more days.

<sup>4</sup> Defined as use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines, or nonmedical use of any psychotherapeutics.

<sup>5</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>6</sup> Includes people described in footnote 5. Also includes people who (a) received intervention services in the past year or (b) never met *DSM-IV* (1994) criteria for dependence or abuse, but who had 1 or more symptoms in the past 12 months or had a problem pattern of use. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

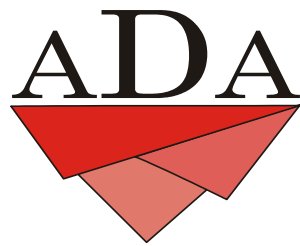
Source: Missouri Household Telephone Survey: 2001/2002.

About 5% of adult women who were pregnant in the year prior to the survey were identified as needing substance abuse treatment, and nearly one-quarter were in need of treatment or intervention. These estimates translated to about 7,700 pregnant women needing substance abuse treatment. Nearly one-fourth of pregnant women needed treatment or intervention, including nearly one-fifth who needed treatment or intervention for alcohol. Given the well-documented relationships between alcohol use during pregnancy and adverse developmental outcomes (e.g., fetal alcohol syndrome), this finding may be cause for concern.

With regard to gambling among Missouri adults, rates of probable pathological gambling were relatively low. Less than 1% of adults in the overall household population and about 1% of adults who gambled on more than 5 days in the year prior to the survey were considered probable pathological gamblers, based on the lifetime occurrence of at least three out of eight possible gambling-related problems. However, about 28% of adults who were in need of substance abuse treatment and 37% in need of treatment or intervention were identified as problem gamblers.



These survey data represent a “snapshot” of substance abuse, need for treatment, physical health, and mental health problems among various subgroups at a single point in time among Missouri adults in the household population. The design of the survey did not allow inferences to be made about whether substance use was causing any of these problems or whether the problems were being aggravated by substance use. Nevertheless, these findings document relationships between substance use and a variety of other problems among adults in the Missouri household population. These results also underscore the challenges posed to primary care, mental health, and substance abuse treatment providers in Missouri responsible for identifying and responding to the multiple needs of their patients and clients.



## **Section III: Substance Use and Need for Treatment Among Missouri Adolescents**

## 8. Prevalence and Correlates of Adolescent Alcohol and Illicit Drug Use

This chapter presents information regarding the prevalence and correlates of alcohol and illicit drug use among the adolescent household population in Missouri. In addition, this chapter examines the use of multiple substances in the year prior to the survey and the medical and nonmedical use of prescription drugs. Data for Missouri adolescents are also compared with data from the 2001 NHSDA.

*More than one-quarter of adolescent household residents in Missouri used alcohol in the 12 months prior to the survey.*

*About 15,000 Missouri adolescents (or 3%) were heavy alcohol users in the past 12 months, and 8,000 adolescents (or 1%) drank heavily in the past month.*

*About 52,000 Missouri adolescents (or 11%) used illicit drugs in the past 12 months.*

### 8.1 Estimates of Alcohol Use

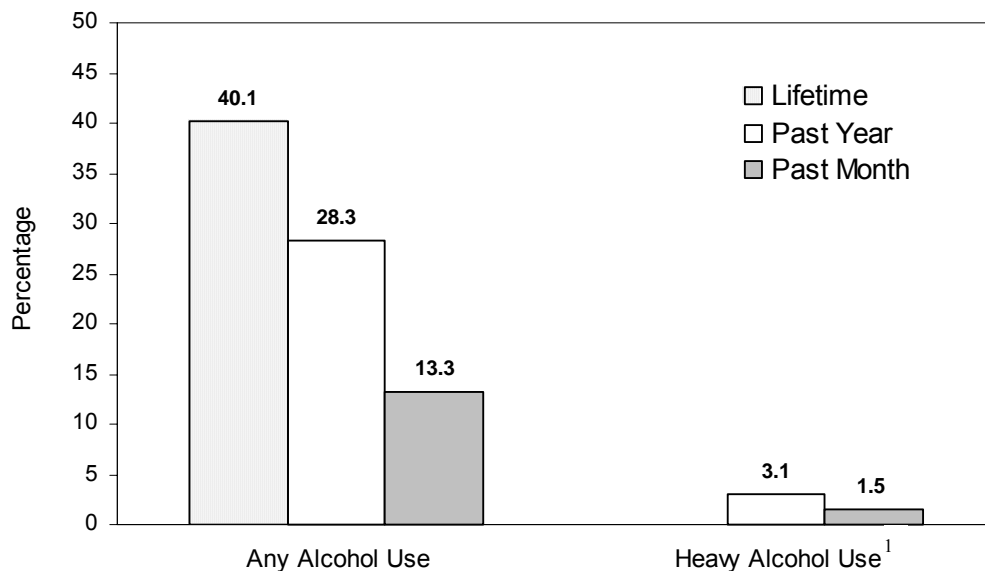
**Figure 8.1** presents the lifetime, past year, and past month prevalence of alcohol use among Missouri adolescents. Statewide, approximately 40% of adolescents aged 12 to 17 in the household population had ever consumed alcohol, approximately 28% drank in the year before the survey, and 13% drank in the month prior to the survey.

As shown in **Figure 8.1** and **Table 8.1**, an estimated 3% of adolescents in the Missouri household population drank heavily in the year before the 2001/2002 survey, while 1.5% did so in the month before the survey. These estimates are equivalent to about 15,000 heavy alcohol users in the past year and about 8,000 in the past month.

**Table 8.2** presents data regarding past year and past month heavy alcohol use among various demographic groups. Adolescents who lived in the Central Region or were male were the most likely to engage in heavy alcohol use. However, the differences were not significant. **Table 8.3** presents estimates of heavy alcohol use in the past year by service area.

### 8.2 Estimates of Illicit Drug Use

**Figure 8.2** and **Tables 8.3** and **8.4** show the percentages and estimated numbers of Missouri adolescents who used different illicit drugs in the lifetime and in the year or month prior to the survey. An estimated 81,000 Missouri household adolescents (16%) used illicit drugs in their lifetime, whereas 52,000 (11%) used illicit drugs in the 12 months before the survey. Most of these were users of marijuana or hashish (15% and 10%, respectively). This finding is consistent with 2000 national-level data, which showed that marijuana was the most commonly used illicit drug (SAMHSA, 2001). The rate of methamphetamine use in the past year was slightly higher than 1%, and the prevalence rate for past year use of cocaine, hallucinogens, heroin/opiates, and inhalants was less than 1%.

**Figure 8.1 Percentages of Alcohol Use in the Lifetime, Past Year, and Past Month in the Missouri Adolescent Household Population: 2001/2002**

<sup>1</sup> For the past year, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month. For the past month, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period on 4 or more days.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 8.1 Estimated Numbers (in Thousands) of Alcohol Users in the Lifetime, Past Year, and Past Month in the Missouri Adolescent Household Population: 2001/2002**

Alcohol Use	Period of Use					
	Lifetime		Past Year		Past Month	
	Number (Thousands)	95% CI <sup>1</sup>	Number (Thousands)	95% CI <sup>1</sup>	Number (Thousands)	95% CI <sup>1</sup>
<b>Any Alcohol Use</b>	197	178 – 217	139	122 – 158	66	54 – 80
Central	29	24 – 35	20	15 – 25	12	9 – 17
Eastern	75	61 – 89	52	41 – 66	23	15 – 34
Northwest	46	36 – 56	34	26 – 44	13	8 – 21
Southeast	23	19 – 28	17	13 – 22	8	5 – 12
Southwest	24	19 – 31	16	11 – 21	9	5 – 14
<b>Heavy Alcohol Use<sup>2</sup></b>	--	--	15	10 – 23	8	4 – 14
Central	--	--	4	2 – 7	2	1 – 5
Eastern	--	--	5	2 – 12	1	0 – 5
Northwest	--	--	3	1 – 10	3	1 – 10
Southeast	--	--	2	1 – 4	1	0 – 3
Southwest	--	--	2	1 – 4	1	0 – 3

--Not applicable.

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated number of people.

<sup>2</sup> For the past year, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month. For the past month, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period on 4 or more days.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 8.2 Prevalence of Heavy Alcohol Use in the Past Year and Past Month in the Missouri Adolescent Household Population, by Selected Demographic Characteristics: 2001/2002**

Demographic Characteristic	Period of Use <sup>1</sup>			
	Past Year		Past Month	
	%	95% CI <sup>2</sup>	%	95% CI <sup>2</sup>
<b>Total Missouri</b>	3.1	2.0 – 4.8	1.5	0.8 – 2.9
<b>Region</b>				
Central	5.6	2.7 – 11.1	2.8	0.9 – 8.1
Eastern	2.6	1.0 – 6.6	0.5	0.1 – 2.5
Northwest	2.7	0.8 – 8.4	2.7	0.8 – 8.5
Southeast	3.1	1.4 – 6.9	1.8	0.6 – 5.5
Southwest	2.6	1.1 – 6.3	1.0	0.2 – 4.1
<b>Gender</b>				
Male	3.2	1.8 – 5.7	1.6	0.7 – 3.5
Female	2.9	1.4 – 5.7	1.4	0.5 – 4.0
<b>Age (years)</b>				
12–14	**	**	*	*
15–17	6.1	3.9 – 9.4	3.0	1.6 – 5.7
<b>Race/Ethnicity</b>				
White	3.5	2.2 – 5.5	1.9	1.0 – 3.5
Black	1.6	0.2 – 10.4	**	**
Hispanic	*	*	**	**
Other <sup>3</sup>	*	*	*	*
<b>School Status</b>				
In school	3.0	1.9 – 4.7	1.6	0.8 – 2.9
Not in school	*	*	*	*

Note: Unweighted numbers of respondents are shown in Table 3.2.

\* Low precision; estimate not reported.

\*\* Estimated percentage rounds to zero.

<sup>1</sup> For the past year, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month. For the past month, defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period on 4 or more days.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimated percentage.

<sup>3</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 8.3 Prevalence and Estimated Numbers of Past Year Heavy Alcohol Use and Illicit Drug Use in the Missouri Adolescent Household Population, by Service Area: 2001/2002**

Service Area	Heavy Alcohol Use <sup>1</sup>			Illicit Drug Use <sup>2</sup>		
	%	95% CI <sup>3</sup>	Number	%	95% CI <sup>3</sup>	Number
1	*	*	*	11.9	4.4 – 28.3	3,200
6	*	*	*	28.8	13.7 – 50.8	4,800
7	*	*	*	22.1	9.3 – 44.2	3,700
8	*	*	*	7.0	1.9 – 23.1	800
9	3.0	0.7 – 11.8	700	31.7	18.4 – 48.9	7,300
10	1.2	0.2 – 8.0	400	14.8	7.8 – 26.3	5,200
11	4.3	1.1 – 16.2	700	14.7	6.9 – 28.4	2,400
12	2.7	0.9 – 8.0	700	29.3	18.0 – 43.7	8,000
13	*	*	*	15.2	6.1 – 33.2	2,300
14	*	*	*	7.2	2.2 – 21.0	1,400
15	*	*	*	13.1	4.6 – 32.1	1,200
16	5.8	1.5 – 20.2	2,500	12.8	6.0 – 25.3	5,600
17	3.4	0.9 – 11.9	600	13.7	5.9 – 28.6	2,300
18	*	*	*	19.0	7.7 – 39.6	2,200
19	*	*	*	15.7	6.5 – 33.3	1,900
20	*	*	*	*	*	*
21	4.7	1.5 – 13.8	800	5.3	1.9 – 14.3	900
22	**	**	**	*	*	*
JC	*	*	*	16.8	8.9 – 29.3	8,300
SL	1.7	0.3 – 9.2	1,300	15.2	7.8 – 27.6	12,000

Note: See Figure 2.1 for Service Area locations.

\* Low precision; no estimates reported.

\*\* Estimated percentage and number rounds to zero.

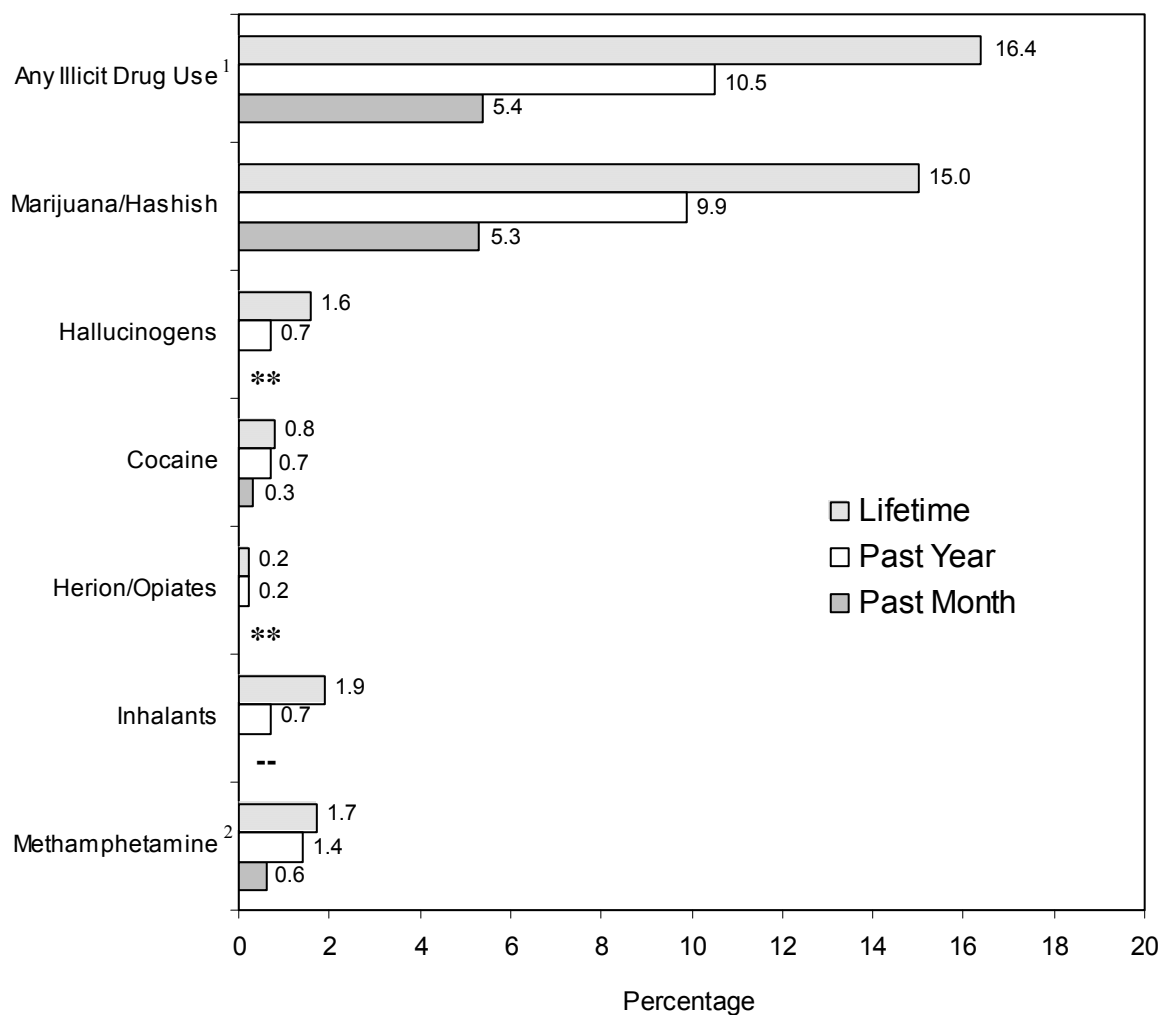
<sup>1</sup> Defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month.

<sup>2</sup> Includes marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamine.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

**Figure 8.2 Prevalence of Use of Illicit Drugs in the Lifetime, Past Year, and Past Month in the Missouri Adolescent Household Population: 2001/2002**



\*\* Estimated percentage rounds to zero.

-- Not applicable.

<sup>1</sup> Use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamine.

<sup>2</sup> Use of crank, crystal, or speed.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 8.4 Estimated Numbers of Users of Illicit Drugs in the Lifetime, Past Year, and Past Month in the Missouri Adolescent Household Population: 2001/2002**

Substance Used	Period of Use					
	Lifetime		Past Year		Past Month	
	Number (Thousands)	95% CI <sup>1</sup>	Number (Thousands)	95% CI <sup>1</sup>	Number (Thousands)	95% CI <sup>1</sup>
<b>Any Illicit Drug Use<sup>2</sup></b>	81	67 – 96	52	41 – 65	27	19 – 37
Marijuana/hashish	74	61 – 89	49	38 – 62	26	18 – 37
Hallucinogens	8	4 – 15	4	2 – 8	**	**
Cocaine	4	2 – 9	4	1 – 8	1	0 – 4
Heroin/opiates	1	1 – 3	1	0 – 3	**	**
Inhalants	9	6 – 15	4	2 – 8	--	--
Methamphetamines <sup>3</sup>	8	5 – 14	7	4 – 12	3	1 – 6

-- Not applicable.

\*\* Estimate percentage rounds to zero.

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated number of people.

<sup>2</sup> Use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines.

<sup>3</sup> Use of crank, crystal, or speed.

Source: Missouri Household Telephone Survey: 2001/2002.

*About 27,000 adolescents (or 5%) used illicit drugs in the past month.*

Many of the Missouri adolescents who used illicit drugs in the past year most likely were not regular or frequent drug users, in that only 27,000 adolescents (5%) used illicit drugs in the past month out of the estimated 52,000 who used illicit drugs in the past year. Like those who used illicit drugs in the past year, virtually all residents who used any illicit drugs in the past month were users of marijuana or hashish (5%). The rate of past month use of all other drugs was 0.6% or less.

**Table 8.5** presents estimates of illicit drug use in the past year among various demographic groups. The highest rates of illicit drug use in the past year were reported in the Central region, by males, and by white adolescents. Adolescent aged 15 to 17 were significantly more likely to report past year illicit drug use compared with younger adolescents.

Approximately 16% of adolescents living in the Central region used illicit drugs in the past year. Adolescent use in the remaining four regions ranged from 8% to 11%. About 12% of males and 9% of females used illicit drugs in the 12 months prior to the 2001/2002 survey. Nearly one-fifth of adolescents between the ages of 15 and 17 used illicit drugs in the past year, four times the rate of 12- to 14-year-olds. About 11% of White adolescents and 6% of Black adolescents reported past year illicit drug use.



**Table 8.5 Prevalence of Illicit Drug Use in the Past Year in the Missouri Adolescent Household Population, by Selected Demographic Characteristics: 2001/2002**

Demographic Characteristic	Illicit Drug Use	
	% <sup>1</sup>	95% CI <sup>2</sup>
<b>Total Missouri</b>	10.5	8.3 – 13.1
<b>Region</b>		
Central	16.0	10.4 – 23.7
Eastern	8.9	5.3 – 14.7
Northwest	10.9	6.9 – 16.7
Southeast	8.3	4.7 – 14.2
Southwest	10.6	6.4 – 17.0
<b>Gender</b>		
Male	11.8	8.7 – 15.9
Female	9.0	6.3 – 12.7
<b>Age (years)</b>		
12–14	4.2	2.5 – 7.0
15–17	16.7	12.9 – 21.2
<b>Race/Ethnicity</b>		
White	10.9	8.6 – 13.8
Black	5.9	2.2 – 14.9
Hispanic	*	*
Other <sup>3</sup>	*	*
<b>School Status</b>		
In school	10.3	8.1 – 13.0
Not in school	*	*

Note: Unweighted numbers of respondents are shown in Table 3.2.

\* Low precision; estimate not reported.

<sup>1</sup> Use of marijuana or hashish, hallucinogens, cocaine (including crack), or heroin/opiates, inhalants, or methamphetamines.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimated percentage.

<sup>3</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

Source: Missouri Household Telephone Survey: 2001/2002.

*Approximately 7% of male and 6% of female adolescents aged 15 to 17 were heavy alcohol users in the past year.*

The prevalence of illicit drug use other than marijuana in the Missouri adolescent household population was very low. However, the low estimates must be interpreted with caution because they likely underrepresent the number of actual users in Missouri.

### **8.3 Comparisons of Alcohol and Illicit Drug Use, by Sex and Other Characteristics**

As noted earlier, adolescent males reported higher rates of alcohol and illicit drug use than females. However, these overall estimates by sex might obscure important differences in rates of use among subgroups of males and females. Likewise, overall estimates might show large

differences in rates of use, but differences among some subgroups of males and females might be less pronounced. To address this point, this section examines substance use among demographic subgroups by sex.

*Slightly more than 18% of males and 15% of females aged 15 to 17 used illicit drugs in the past year.*

**Table 8.6** presents past year heavy alcohol use and illicit drug use for adolescent males and females by various demographic characteristics. Male and female adolescents aged 15 to 17 were significantly more likely to have engaged in past year heavy alcohol use and illicit drug use compared with those aged 12 to 14. Heavy alcohol use in the past year by males aged 15 to 17 was 65 times the rate for males 12 to 14. Past year illicit drug use by older males was three times the rate of younger male adolescents. Female adolescents aged 15 to 17 used illicit drugs at 5 times the rate of females aged 12 to 14. Adolescent White males and females reported slightly higher rates of illicit drug use than Black males and females, but the difference was not significant.

## 8.4 Multiple Substance Use

Thus far, estimates of illicit drug use and heavy alcohol use have been presented and discussed separately. However, evaluating the prevalence of alcohol and illicit drug use separately can sometimes be misleading because individuals may use both alcohol and other drugs, sometimes in combination.

Therefore, **Table 8.7** focuses on three categories of multiple substance use in the past year. Multiple substance use was categorized as either (a) heavy alcohol use in the past 12 months and use of at least one illicit drug in the same time period, (b) use of more than one illicit drug in the past 12 months, or (c) heavy alcohol use and use of more than one illicit drug in the past 12 months.

*Approximately 1.8% of Missouri adolescents used alcohol heavily and used at least one illicit drug in the past year, 1.6% used more than one illicit drug, and less than 1% used alcohol heavily and more than one illicit drug.*

As shown in **Table 8.7**, an estimated 1.8% of adolescents in the Missouri household population used alcohol heavily and used at least one illicit drug in the past year, making this the most common multiple substance use category in this population. Because most adolescents who used illicit drugs used marijuana, the most prevalent combination of multiple substance use was likely to be marijuana and heavy alcohol use. However, these users of multiple substances may not necessarily have used these substances within a few hours of each other. Polydrug use was less common, with 1.6% of Missouri adolescents reporting use of two or more illicit drugs in the past year. Less than 1% of adolescents used alcohol heavily and more than one illicit drug. Adolescents aged 15 to 17 were significantly more likely than adolescents aged 12 to 14 to report polydrug use (3% vs. 0.2%, respectively).

**Table 8.6 Past Year Substance Use in the Missouri Adolescent Household Population, by Gender and Demographic Groups: 2001/2002**

	Heavy Alcohol Use, Past Year <sup>1</sup>				Any Illicit Drugs, Past Year <sup>2</sup>			
	Male		Female		Male		Female	
	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>
<b>Age (Years)</b>								
12–14	0.1	0.0 – 2.5	*	*	5.5	2.8 – 10.4	2.9	1.3 – 6.4
15–17	6.5	3.6 – 11.2	5.8	2.9 – 11.3	18.1	12.9 – 24.9	15.1	10.3 – 21.8
<b>Race/Ethnicity</b>								
White	3.9	2.2 – 6.9	3.1	1.5 – 6.4	12.8	9.3 – 17.4	8.9	6.3 – 12.5
Black	**	**	*	*	7.5	2.1 – 23.6	4.4	1.0 – 17.5
Hispanic	*	*	*	*	*	*	*	*
Other <sup>4</sup>	*	*	*	*	*	*	*	*
<b>School Status</b>								
In school	3.1	1.7 – 5.6	2.9	1.5 – 5.9	11.7	8.5 – 15.8	8.8	6.1 – 12.6
Not in school	*	*	*	*	*	*	*	*

\* Low precision; estimate not reported.

\*\* Estimated percentage rounds to zero.

<sup>1</sup> Defined as drinking five or more drinks (four or more drinks for women) in a 24-hour period at least once a week or on 4 or more days in the past month.<sup>2</sup> Defined as use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines.<sup>3</sup> The 95% CI = 95% confidence interval for the estimated percentage.<sup>4</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 8.7 Prevalence of Multiple Substance Use in the Past Year in the Missouri Adolescent Household Population, by Gender: 2001/2002**

	Multiple Substance Use					
	Heavy Alcohol and at Least 1 Drug <sup>1</sup>		More than 1 Drug <sup>2</sup>		Heavy Alcohol and More than 1 Drug <sup>3</sup>	
	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>
<b>Total Missouri</b>	1.8	1.0 – 3.0	1.6	1.0 – 2.6	0.8	0.3 – 1.8
<b>Region</b>						
Central	3.0	1.3 – 6.8	2.4	0.8 – 7.2	0.7	0.1 – 4.6
Eastern	1.9	0.6 – 5.8	1.2	0.3 – 4.1	1.1	0.3 – 4.3
Northwest	0.1	0.0 – 2.7	0.5	0.1 – 2.3	*	*
Southeast	2.2	0.8 – 6.0	1.8	0.7 – 4.5	0.9	0.2 – 3.5
Southwest	2.6	1.1 – 6.4	3.7	1.7 – 8.0	1.2	0.3 – 4.8
<b>Gender</b>						
Male	2.1	1.0 – 4.2	1.7	0.9 – 3.1	0.8	0.3 – 2.0
Female	1.4	0.6 – 3.3	1.5	0.6 – 3.4	0.8	0.2 – 2.9
<b>Age (Years)</b>						
12–14	*	*	0.2	0.0 – 1.0	*	*
15–17	3.5	2.0 – 6.0	3.0	1.8 – 5.1	1.6	0.7 – 3.5
<b>Race/Ethnicity</b>						
White	2.2	1.3 – 3.7	1.9	1.2 – 3.2	1.0	0.4 – 2.2
Black	**	**	*	*	**	**
Hispanic	*	*	*	*	*	*
Other <sup>5</sup>	*	*	*	*	*	*

Note: Unweighted numbers of respondents are shown in Table 3.2.

\* Low precision; estimate not reported.

\*\* Estimated percentage rounds to zero.

<sup>1</sup> Weekly consumption of five or more drinks in a 24-hour period for men or four or more drinks in a 24-hour period for women, and use of marijuana, hallucinogens, cocaine, heroin/opiates, inhalants, or methamphetamines, or nonmedical use of any psychotherapeutics in the past 12 months (but not necessarily in combination with alcohol).

<sup>2</sup> Using two or more of the following drugs at any time in the past 12 months: marijuana, hallucinogens, cocaine, heroin/opiates, inhalants, or methamphetamines, or nonmedical use of any psychotherapeutics.

<sup>3</sup> Heavy alcohol in past 12 months (as defined in footnote 1) and use of two or more illicit drugs in the past 12 months (as defined in footnote 2).

<sup>4</sup> The 95% CI = 95% confidence interval for the estimated percentage.

<sup>5</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

Source: Missouri Household Telephone Survey: 2001/2002.

## 8.5 State and National Comparisons of Substance Use

To provide a broader perspective about the rates of substance use among Missouri adolescents, a comparison was made of Missouri adolescents' substance use in 2001/2002 with data collected nationally through the 2001 NHSDA (SAMHSA, 2002).<sup>1</sup> Comparison of findings with the NHSDA provides a reasonable benchmark for assessing the validity of the 2001/2002 Missouri survey. There is the potential, however, for interview mode to influence self-report data, possibly affecting the comparison of the Missouri surveys, which use a telephone method of collection, and the NHSDA, which used face-to-face interviewing.

**Figure 8.3** compares prevalence estimates from the 2001/2002 Missouri Household Telephone Survey and 2001 NHSDA.

*Adolescent methamphetamine use in the past year for Missouri in 2001/2002 was noticeably higher than 2000 national estimates.*

Past year alcohol use in Missouri in 2001/2002 (28%) was slightly lower than alcohol use nationally (34%). For substances other than alcohol, rates of past year use tended to be somewhat lower among the Missouri adolescent household population in 2001/2002 compared with national estimates from 2001. For example, nationally, in 2001, rates of marijuana, hallucinogen, cocaine, and inhalant use in the past year tended to be almost 1.5 to 5 times as high as the 2001/2002 estimates for Missouri. Only methamphetamine use in the past year was higher among Missouri adolescents than among adolescents nationally.

As mentioned in Chapter 5, given that telephone surveys (including the 2001/2002 Missouri Household Telephone Survey) do not cover households without telephones, a telephone survey might be expected to produce lower drug use prevalence estimates compared with face-to-face interviews especially among those eligible for publicly funded treatment services. Nevertheless, even if some telephone survey respondents who used particular illicit drugs in the year prior to the 2001/2002 survey reported lifetime (but not past year) use or denied lifetime use altogether, the estimates in this chapter as a whole indicate that sizable numbers of Missouri Household Telephone Survey adolescents *were* willing to report illicit drug use in the past year.

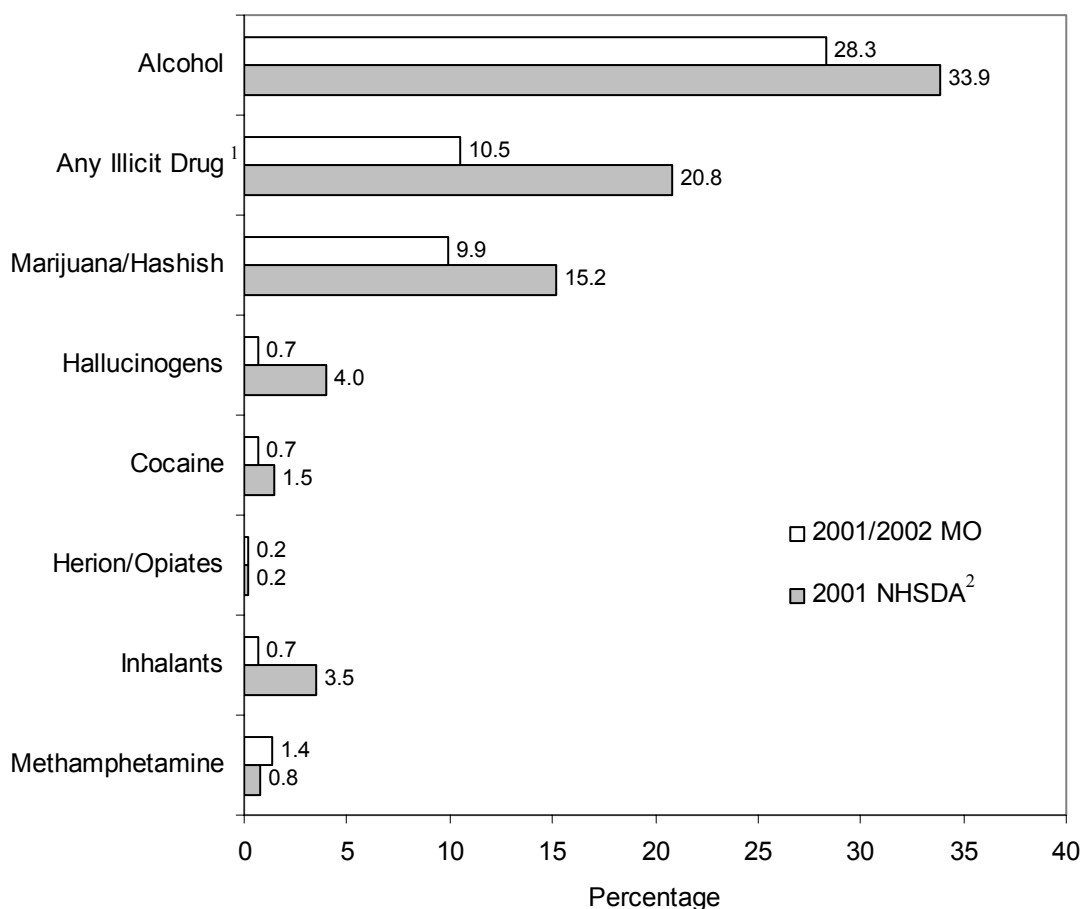
## 8.6 Use of Prescription Drugs

This section presents data on Missouri adolescents' medical and nonmedical use of prescription drugs in the lifetime, past year, and past month. Respondents were asked about their use of psychotherapeutics: prescription sedatives, tranquilizers, stimulants, opiates/pain killers, antidepressants, and "nerve pills."

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<sup>1</sup> The NHSDA collected data nationally from nearly 69,000 respondents aged 12 or older in 2001, including more than 23,000 respondents aged 12 to 17 (nearly 300 of whom resided in Missouri).

**Figure 8.3 State and National Comparisons of Past Year Alcohol and Illicit Drug Use in the Missouri Adolescent Household Population**



<sup>1</sup> Any core illicit drug includes marijuana or hashish, hallucinogens, cocaine, and heroin/opiates.

<sup>2</sup> National estimates from the National Household Survey on Drug Abuse.

Source: Missouri Household Telephone Survey: 2001/2002 and 2001 National Household Survey on Drug Abuse.

### 8.6.1 Medical Use of Prescription Drugs

To measure the legitimate use of prescription drugs, respondents were asked if they had ever been prescribed any of the prescription medicines listed in **Table 8.8**. Those respondents who said yes were asked when they were last prescribed these medications.

Two-fifths (42%) of Missouri adolescents reported having ever used a prescription drug, 31% reported such use in the past year, and 11% in the past month. The most frequently reported type of prescription used was pain killers.

**Table 8.8 Prevalence of Medical Use of Psychotherapeutics in the Missouri Adolescent Household Population: 2001/2002**

	Lifetime		Past Year		Past Month	
	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>
<b>Any Psychotherapeutics</b>	41.9	37.9 – 46.1	30.9	27.1 – 34.9	10.9	8.5 – 13.9
Sedatives	2.7	1.8 – 4.1	1.5	0.8 – 2.6	0.7	0.3 – 1.9
Tranquilizers	1.2	0.6 – 2.4	0.7	0.3 – 1.7	*	*
Stimulants	4.6	3.2 – 6.6	3.3	2.1 – 5.0	1.7	0.9 – 3.2
Opiates/pain killers	23.2	19.8 – 26.9	15.5	12.7 – 18.8	4.0	2.7 – 6.0
Antidepressants	5.5	4.1 – 7.5	4.0	2.8 – 5.7	2.1	1.2 – 3.6
Nerve pills	1.2	0.6 – 2.2	0.8	0.4 – 1.8	0.3	0.0 – 1.6

Note: Medical use is defined as use as prescribed.

\* Low precision; estimate not reported.

<sup>1</sup>The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

## 8.6.2 Nonmedical Use of Prescription Drugs

To measure the nonmedical use of prescription drugs, respondents were asked if they had used prescription medicines in ways other than prescribed, in larger amounts than prescribed, or more often than the doctor ordered. They were also asked if they had used any of these drugs without a doctor's prescription.

*About 8% of respondents reported past year nonmedical prescription drug use, and 5% reported past month use. Pain killers were the most commonly reported type of prescription drug used.*

According to **Table 8.9**, considerably fewer adolescent respondents reported the nonmedical use of prescription drugs than the medical use. Nine percent of adolescents reported the nonmedical use of any prescription medicine in the lifetime, 8% in the past year, and 5% in the past month. Pain killers were the most commonly reported type of prescription drug used, with 7% of respondents reporting nonmedical use of pain killers in the lifetime, 7% in the past year, and 3% in the past month.

## 8.6.3 Prescription Drug Use by Demographic Characteristics

There were no statistically significant differences in the medical and nonmedical use of prescription drugs in the past year by demographic characteristics. However, **Table 8.10** shows that older adolescents were more likely than younger adolescents to report nonmedical prescription drug use (12% vs. 5%, respectively).

**Table 8.9 Prevalence of Nonmedical Use of Psychotherapeutics in the Missouri Adolescent Household Population: 2001/2002**

	Lifetime		Past Year		Past Month	
	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>
<b>Any Psychotherapeutics</b>	9.2	7.0 – 12.0	8.4	6.3 – 11.2	4.6	3.1 – 6.7
Sedatives	0.8	0.3 – 1.9	0.3	0.1 – 0.7	0.2	0.1 – 0.6
Tranquilizers	0.6	0.1 – 2.5	0.6	0.1 – 2.5	0.5	0.1 – 2.7
Stimulants	0.8	0.4 – 1.6	0.7	0.3 – 1.5	0.4	0.2 – 1.2
Opiates/pain killers	7.2	5.2 – 9.8	6.7	4.8 – 9.2	3.2	2.1 – 4.9
Antidepressants	1.5	0.8 – 2.7	1.1	0.6 – 2.1	0.7	0.3 – 1.7
Nerve pills	0.1	0.0 – 0.4	**	**	**	**

Note: Nonmedical use is defined as use for reasons other than prescribed, in larger amounts than prescribed, more often than prescribed, or without a prescription.

\*\* Estimated percentage records to zero.

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

## 8.7 Summary

Overall, a significant proportion of Missouri adolescents used alcohol or illicit drugs in the past year or past month. Over one-quarter of adolescents (28%) used alcohol at least once in the 12 months before the survey, and more than one in 10 (13%) used alcohol in the month preceding the survey. In addition, about 15,000 adolescents (about 3%) used alcohol heavily in the previous 12 months, and 8,000 adolescents (1.5%) drank heavily in the month prior to the 2001/2002 survey. Some of the highest rates of heavy alcohol use in the past year were observed for those between the ages of 15 and 17 (6%).

Approximately 11% of adolescents, or about 52,000 persons, used one or more illicit drugs in the 12 months before the survey, with another 5% (27,000) reporting past month illicit drug use. Almost all illicit drug use involved the use of marijuana. As was the case with heavy alcohol use, rates of illicit drug use in the past year were higher among adolescents between the ages of 15 and 17.

Approximately 6% of adolescent males and females aged 15 to 17 were heavy alcohol users in the past year, compared with 3% of all adolescent males and females. Approximately 18% of males and 15% of females aged 15 to 17 reported past year illicit drug use. Adolescent White males and females reported higher rates of illicit drug use than Black males or females.



**Table 8.10 Prevalence of Any Psychotherapeutics in the Past Year in the Missouri Adolescent Household Population, by Selected Demographic Characteristics: 2001/2002**

Demographic Characteristic	Medical Use		Nonmedical Use	
	%	95% CI <sup>1</sup>	%	95% CI <sup>1</sup>
<b>Total Missouri</b>	30.9	27.1 – 34.9	8.4	6.3 – 11.2
<b>Region</b>				
Central	30.8	23.4 – 39.3	7.2	3.8 – 13.2
Eastern	31.1	24.1 – 39.0	6.7	3.2 – 13.3
Northwest	27.5	20.6 – 35.7	8.5	4.8 – 14.8
Southeast	31.5	24.2 – 39.9	8.6	5.0 – 14.5
Southwest	35.8	27.0 – 45.7	13.7	8.4 – 21.7
<b>Gender</b>				
Male	31.6	26.5 – 37.3	7.0	4.5 – 10.8
Female	30.1	24.9 – 35.9	9.9	6.7 – 14.4
<b>Age (years)</b>				
12–14	24.7	19.8 – 30.3	5.1	3.2 – 8.2
15–17	36.8	31.4 – 42.5	11.6	8.1 – 16.4
<b>Race/Ethnicity</b>				
White	32.7	28.7 – 37.0	9.0	6.8 – 11.8
Black	23.6	13.0 – 38.9	*	*
Hispanic	25.4	11.4 – 47.3	6.6	1.5 – 24.1
Other <sup>2</sup>	19.9	9.3 – 37.6	*	*
<b>School Status</b>				
In school	30.9	27.1 – 34.9	8.4	6.2 – 11.2
Not in school	*	*	*	*

Note: Unweighted numbers of respondents are shown in Table 3.2.

Medical use is defined as use as prescribed. Nonmedical use is defined as use for reasons other than prescribed, in larger amounts than prescribed, more often than prescribed, or without a prescription.

\* Low precision; estimate not reported.

<sup>1</sup> The 95% CI = 95% confidence interval for the estimated percentage.

<sup>2</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

Source: Missouri Household Telephone Survey: 2001/2002.

Past year heavy alcohol use and use of at least one illicit drug was reported by almost 2% of Missouri adolescents. Similarly, almost 2% of adolescents reported polydrug use in the past year; less than 1% reported past year heavy alcohol use and polydrug use.

Missouri adolescents in 2001/2002 had rates of substance use that were lower than national rates from the 2001 NHSDA. Rates of any alcohol, marijuana, hallucinogen, cocaine, and inhalant use in the past year were lower among Missouri adolescents in 2001/2002 than adolescents nationally in 2000. However, rates of methamphetamine use in the past year were higher among Missouri adolescents than among adolescents nationally.

Two-fifths of Missouri adolescents reported ever being prescribed a prescription drug. About 9% of adolescents reported nonmedical prescription drug use in the lifetime, 8% in the past year, and 5% in the past month. Pain killers were the most frequently reported type of prescription used.

Overall, the data presented in this chapter provide basic prevalence information about alcohol and illicit drug use for the Missouri household population and offer insights into the groups most likely to experience substance use problems. These data also provide the foundation for examining the need for treatment for alcohol and other drug use problems, described in Chapter 9 of this report.

## 9. Need for Substance Abuse Treatment Among Adolescents

This chapter builds on the substance use information presented in Chapter 8 and addresses three key questions related to the need for substance abuse treatment services among adolescents:

1. What problems have Missouri adolescents experienced due to their use of alcohol or other drugs?
2. What are the percentages and numbers of the Missouri adolescent household population considered in need of treatment or intervention for their abuse of alcohol or other drugs?
3. What percentage and number of individuals who are in need of treatment are also eligible for publicly funded treatment services?

In this chapter, we present findings related to the problems associated with alcohol or illicit drug use among Missouri adolescents, the overall prevalence of treatment or intervention need, and need for treatment or intervention among different demographic subgroups. Additional findings are presented on insurance coverage and benefits for those in need of treatment, prior treatment that Missouri adolescents have received, and the distribution of level of services needed by Missouri adolescents.

### 9.1 Prevalence of Problems Associated with Alcohol or Illicit Drug Use

As noted in Section 6.1, the Missouri Household Telephone Survey questionnaire included questions to identify symptoms of dependence and abuse for alcohol and other drugs, based on the DSM-IV criteria. This section presents findings on the prevalence of problems related to substance dependence or abuse among adolescents in the Missouri household population in 2001/2002.

#### 9.1.1 Specific Problems Associated with Alcohol or Illicit Drug Use

**Table 9.1** shows the percentages of adolescents in the Missouri household population who had specific problems associated with their use of alcohol or illicit drugs. These problems correspond to the symptoms of dependence or abuse that were described in Section 2.4.4. Findings are presented for the occurrence of these problems in a person's lifetime and in the 12 months prior to the 2001/2002 survey.

*Problems associated with alcohol use were more prevalent among Missouri adolescents than were problems associated with illicit drug use. However, Missouri adolescents were more likely to have used alcohol than illicit drugs.*

**Table 9.1 Percentages Reporting Substance Use Problems in the Past Year in the Missouri Adolescent Household Population: 2001/2002**

Substance Use Problem <sup>1</sup>	Alcohol		Any Illicit Drug <sup>2</sup>		Alcohol or Any Illicit Drug	
	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>	%	95% CI <sup>3</sup>
Developed tolerance	3.7	2.4 – 5.7	2.3	1.5 – 3.5	5.2	3.7 – 7.3
Withdrawal	1.1	0.6 – 2.0	1.1	0.5 – 2.2	1.8	1.1 – 3.0
Used in larger amounts or over a longer period than intended	5.3	3.6 – 7.6	2.5	1.5 – 4.2	6.5	4.7 – 8.9
Persistent desire or unsuccessful efforts to cut down or control use	2.1	1.1 – 3.9	1.1	0.5 – 2.7	2.6	1.5 – 4.4
Great deal of time spent getting/using/getting over effects	0.8	0.3 – 2.3	1.1	0.6 – 2.1	1.5	0.8 – 2.8
Given up/reduced important social, occupational, or recreational activities	0.5	0.2 – 1.1	0.6	0.2 – 1.5	0.9	0.4 – 1.9
Continued use despite physical or psychological problem	1.9	1.0 – 3.5	1.0	0.5 – 2.1	2.3	1.3 – 3.9
Use resulting in failure to fulfill major obligations at work, school, or home	1.8	0.9 – 3.4	1.2	0.7 – 2.3	2.6	1.5 – 4.3
Recurrent use in physically hazardous situations	3.5	2.3 – 5.4	1.9	1.2 – 3.1	4.4	3.0 – 6.3
Recurrent substance-related legal problems	0.1	0.0 – 1.0	0.2	0.1 – 0.6	0.4	0.1 – 1.0
Continued use despite social or interpersonal problems caused or escalated by use	0.8	0.4 – 1.7	0.8	0.4 – 1.6	1.5	0.8 – 2.6

<sup>1</sup> Individuals may report more than one type of substance use problem.

<sup>2</sup> Use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines, or nonmedical use of any psychotherapeutics.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

Having a given problem, however, does not necessarily mean that a person would meet diagnostic criteria for dependence or abuse. Nevertheless, information on the prevalence of these problems provides some indication of the extent of risk for problems that would require substance abuse treatment. Information about specific problems also indicates which problems may be contributing most to the occurrence of dependence or abuse.

As shown in **Table 9.1**, rates of problems associated with alcohol use were greater than the corresponding rates for problems associated with the use of illicit drugs and thus dominate estimates of the rates of problems due to either. In particular, nearly 40% of adolescents in the Missouri household population had used alcohol at least once in their lifetime, compared with about 16% who had ever used illicit drugs (see **Figures 8.1** and **8.2**).

Highlights from **Table 9.1** include the following:

- # More than 6% of the Missouri adolescent household population had recently used alcohol or illicit drugs in larger amounts or over a longer period than intended. About 5% developed a tolerance to alcohol or illicit drugs.
- # Use in larger amounts or over a longer period than intended was the most commonly occurring problem in the past year for alcohol (5%) and illicit drugs (3%).
- # Other more frequently occurring problems for alcohol included development of tolerance (4%) and recurrent use in physically hazardous situations (4%).

### 9.1.2 Dependence or Abuse

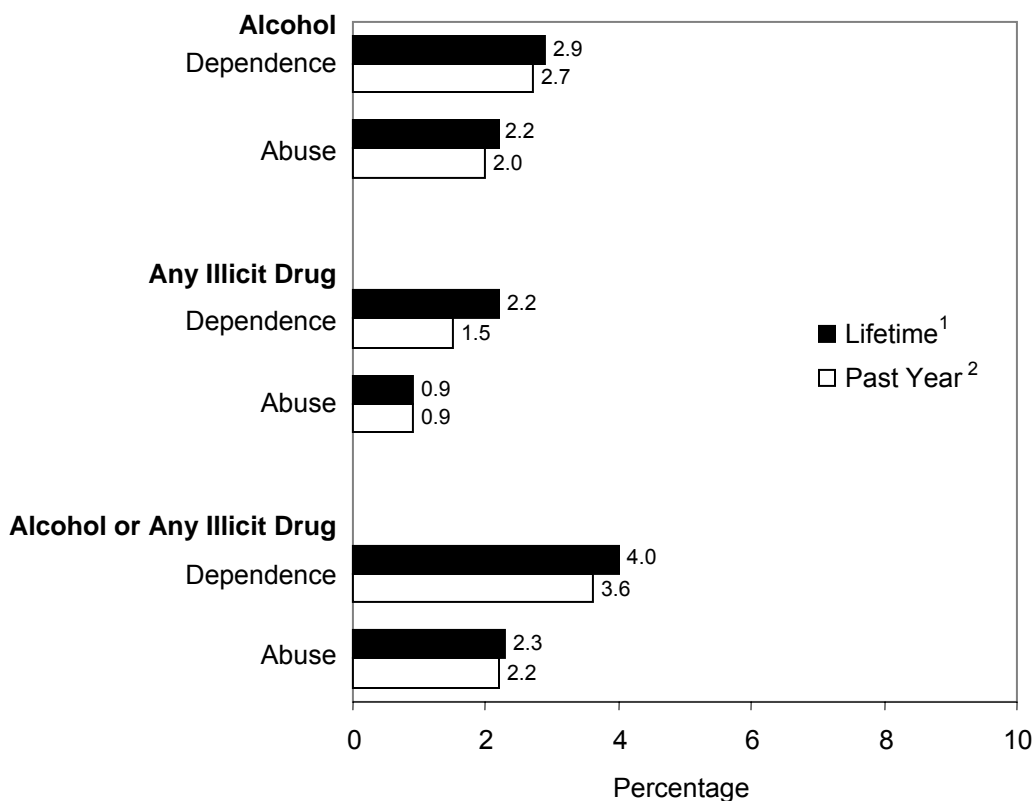
**Figure 9.1** shows the percentages of adolescents in the Missouri household population whose problems related to substance use were serious to the point of them being classified as dependent on or abusing alcohol and illicit drugs based on DSM-IV symptoms. In addition, **Table 9.2** shows the estimated numbers of adolescents who met past year criteria for dependence or abuse. The estimates in **Table 9.2** are rounded to the nearest hundred people.

Highlights from **Figure 9.1** and **Table 9.2** include the following:

- # An estimated 3% of adolescents in the Missouri household population were classified as meeting lifetime DSM-IV criteria for alcohol dependence. An estimated 2% of the household population were classified as meeting lifetime criteria for alcohol abuse. Altogether, then, an estimated 5% of household

*About 5% of adolescents in the household population met lifetime and past year criteria for alcohol dependence or abuse.*

**Figure 9.1 Prevalence of Dependence or Abuse in the Lifetime and Past Year in the Missouri Adolescent Household Population: 2001/2002**



<sup>1</sup> Lifetime dependence based on *DSM-IV* (1994) criteria included adolescents who experienced three or more symptoms of dependence on a given drug in the lifetime. Some of these symptoms persisted for a month or more, or occurred repeatedly over a longer period of time. Lifetime abuse based on *DSM-IV* (1994) criteria included adolescents who never had a lifetime diagnosis of dependence on a given drug but reported one or more symptoms of abuse in the lifetime. Some of these symptoms persisted for a month or more, or occurred repeatedly over a longer period of time.

<sup>2</sup> Past year dependence based on *DSM-IV* (1994) criteria included adolescents who experienced three or more symptoms of dependence on a given drug in the past 12 months. Past year abuse based on *DSM-IV* (1994) criteria included adolescents who never had a past year diagnosis of dependence but reported one or more symptoms of abuse in the past 12 months.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 9.2 Prevalence of Dependence and Abuse in the Past Year in the Missouri Adolescent Household Population, by Drug: 2001/2002**

Substance	Problem					
	Dependence <sup>1</sup>			Abuse <sup>2</sup>		
	%	Number <sup>3</sup>	95% CI <sup>4</sup>	%	Number <sup>3</sup>	95% CI <sup>4</sup>
Alcohol	2.7	1,330	760 – 2,310	2.0	1,010	580 – 1,740
Any illicit drugs <sup>5</sup>	1.5	730	420 – 1,270	0.9	440	230 – 840
Alcohol or any illicit drug	3.6	1,770	1,130 – 2,760	2.2	1,080	650 – 1,800

<sup>1</sup> Met *DSM-IV* (1994) criteria for dependence on a given substance. See Chapter 2 for details on how dependence was defined.

<sup>2</sup> Met *DSM-IV* (1994) criteria for abuse of a given substance. See Chapter 2 for details on how abuse was defined.

<sup>3</sup> Estimated number of people rounded to the nearest hundred.

<sup>4</sup> The 95% CI = 95% confidence interval of the estimated number of people.

<sup>5</sup> Use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, methamphetamine, or nonmedical use of any psychotherapeutic.

Source: Missouri Household Telephone Survey: 2001/2002.

population adolescents were classified as meeting lifetime criteria for either alcohol dependence or abuse.<sup>1</sup>

# An estimated 2.7% of adolescents in the household population were defined as having past year alcohol dependence (i.e., past 12 months), and 2% of adolescents in the household population had past year alcohol abuse. Altogether, more than 2,340 adolescents in the Missouri household population were defined as having past year alcohol dependence (1,330) or abuse (1,010) diagnoses.

*More than 2,340 Missouri adolescents had current alcohol dependence or abuse diagnoses. About 1,170 adolescents had current illicit drug dependence or abuse diagnoses.*

# An estimated 2% of the adolescent household population, or about 730 adolescents, were classified as meeting past year illicit drug dependence criteria, and 1% met abuse criteria (440 adolescents). Together, approximately 1,170 adolescents were defined as meeting criteria for past year illicit drug use dependence or abuse.

# For alcohol or any illicit drug, about 4% of adolescents met past year dependence criteria (1,770 adolescents) and 2% met criteria for abuse (1,080).

<sup>1</sup> The estimated percentages of people meeting lifetime DSM-IV criteria for alcohol dependence or abuse can be added together because these categories are mutually exclusive. That is, people who met lifetime criteria for alcohol abuse by definition did not meet lifetime criteria for dependence.

## 9.2 Prevalence of Need for Substance Abuse Treatment and Treatment or Intervention

**Figure 9.2** shows the percentage of the Missouri adolescent household population who were considered to be in need of substance abuse treatment and treatment or intervention in the past 12 months (see definitions of treatment need in Chapter 2).

*An estimated 6% of Missouri adolescents were in need of treatment for alcohol or illicit drugs in 2001/2002. Need for alcohol treatment accounted for most of the need for treatment, with 5% of adults needing treatment for alcohol.*

An estimated 6% of the adolescent household population in Missouri in 2001/2002 were *in need of treatment* due to problems with alcohol or any illicit drug, including marijuana, hallucinogens, cocaine, heroin/opiates, inhalants, methamphetamine, or nonmedical use of prescription drugs.<sup>2</sup> This percentage translated to an estimated 28,500 adolescents in need of treatment (**Table 9.3**). The Central Region had the highest estimated need for treatment and treatment or intervention (**Table 9.3**). **Table 9.4** presents estimates by service areas. The overall rate of treatment need (6%) from the 2001/2002 survey is well within the range of estimates in the literature and from STNAP surveys in other states.

Approximately 8% of adolescents were *in need of substance abuse treatment or intervention*. This percentage translates into 39,000 adolescents between the ages of 12 and 17.

Alcohol accounted for most of the need for treatment and need for treatment or intervention among Missouri adolescents in the household population. An estimated 5% of adolescents in the household population were in need of treatment specifically for alcohol (with or without the need for treatment for problems related to use of other drugs), and 7% were in need of alcohol treatment or intervention. In comparison, 2% of the household population were in need of treatment, and 4% were in need of treatment or intervention for the illicit drugs covered in the telephone survey.

## 9.3 Correlates of Need for Treatment and Need for Treatment or Intervention

### 9.3.1 Age Group and Sex

*About 18,000 males and 10,000 females in the Missouri adolescent household population needed substance abuse treatment.*

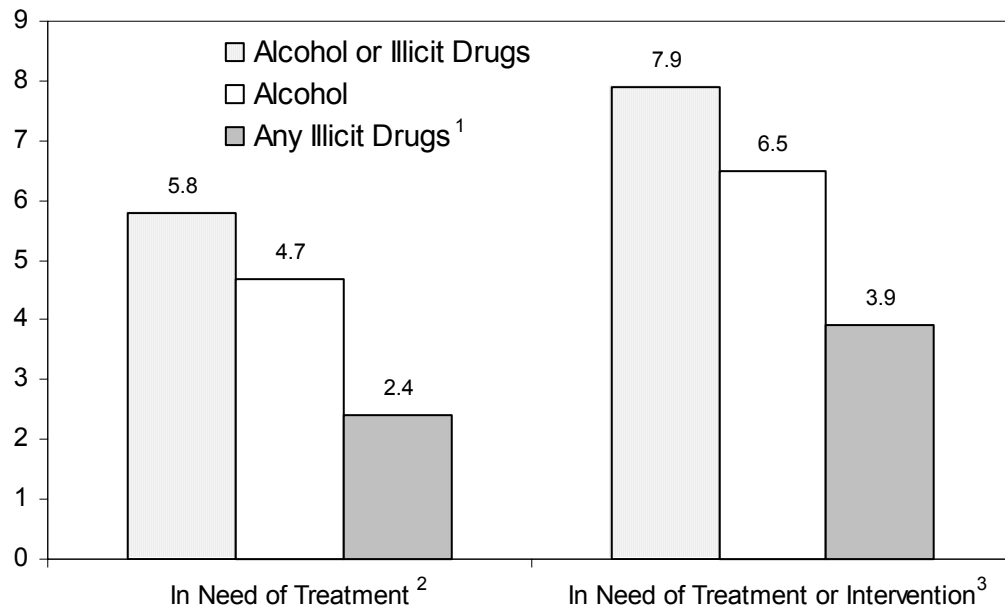
**Figure 9.3** and **Table 9.5** provide information on the need for alcohol and other drug treatment among Missouri adolescents in the household population according to sex and age. **Figure 9.4** and **Table 9.6** provide the same for adolescents in need of treatment or intervention. As discussed in Chapter 2, readers should keep in mind that the low response rate for the study makes it difficult to assess the validity of the

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<sup>2</sup> Nonmedical use is defined as use for reasons other than prescribed, in larger amounts than prescribed, more often than prescribed, or without a prescription.



**Figure 9.2 Percentages of the Missouri Adolescent Household Population in Need of Alcohol or Illicit Drug Use Treatment or Intervention in the Past Year: 2001/2002**



Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> Defined as marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines, or nonmedical psychotherapeutics.

<sup>2</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>3</sup> Includes people who (a) were determined to need treatment (as described in footnote 2) or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 9.3 Past Year Prevalence and Estimated Numbers (in Thousands) of Missouri Adolescents in Need of Alcohol or Illicit Drug Use Treatment or Intervention, by Region: 2001/2002**

	Alcohol			Any Illicit Drug <sup>1</sup>			Alcohol or Any Illicit Drug		
	%	Number	95% CI <sup>2</sup>	%	Number	95% CI <sup>2</sup>	%	Number	95% CI <sup>2</sup>
<b>Need for Treatment<sup>3</sup></b>	4.7	23,300	15,700 – 34,400	2.4	11,700	7,600 – 17,800	5.8	28,500	20,300 – 39,700
Central	7.0	4,400	2,600 – 7,400	2.7	1,700	600 – 4,600	8.4	5,300	3,200 – 8,700
Eastern	5.9	10,700	5,300 – 21,300	0.8	1,500	300 – 6,900	6.1	11,000	5,400 – 21,400
Northwest	2.2	2,600	700 – 8,600	1.5	1,700	600 – 5,100	3.6	4,300	1,800 – 9,900
Southeast	3.5	2,200	800 – 5,400	3.0	1,900	700 – 4,800	4.4	2,700	1,200 – 5,800
Southwest	5.0	3,400	1,600 – 7,200	7.1	4,900	2,600 – 8,900	7.6	5,200	2,900 – 9,200
<b>Need for Treatment or Intervention<sup>4</sup></b>	6.5	32,200	23,200 – 44,600	3.9	19,000	12,900 – 27,900	7.9	39,000	29,300 – 51,700
Central	9.6	6,000	3,700 – 9,600	3.5	2,200	1,000 – 5,100	11.3	7,100	4,500 – 11,000
Eastern	7.4	13,400	7,200 – 24,200	3.5	6,400	2,700 – 14,800	8.6	15,600	9,000 – 26,500
Northwest	5.2	6,100	2,700 – 13,300	2.3	2,700	1,000 – 6,900	6.3	7,400	3,700 – 14,500
Southeast	4.9	3,000	1,400 – 6,100	4.1	2,500	1,100 – 5,400	5.8	3,600	1,900 – 6,700
Southwest	5.4	3,700	1,800 – 7,500	7.6	5,200	2,800 – 9,200	7.7	5,300	2,900 – 9,200

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> Defined as use of marijuana or hashish, hallucinogens, cocaine (including crack), heroin/opiates, inhalants, or methamphetamines.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimated number of people.

<sup>3</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>4</sup> Includes people who (a) were determined to need treatment (as described in footnote 3) or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 9.4 Past Year Prevalence and Estimated Numbers of the Missouri Adolescent Household Population in Need of Treatment or Intervention, by Service Area: 2001/2002**

Service Area	Need for Treatment <sup>1</sup>			Need for Treatment or Intervention <sup>2</sup>		
	%	95% CI <sup>3</sup>	Number	%	95% CI <sup>3</sup>	Number
1	3.5	0.50 – 20.5	900	6.9	1.8 – 23.6	1,800
6	11.7	2.8 – 37.7	1,900	21.4	7.1 – 49.4	3,600
7	4.5	0.70 – 23.9	800	4.5	0.7 – 23.9	800
8	3.8	0.55 – 22.1	400	3.8	0.6 – 22.1	400
9	7.1	2.7 – 17.1	1,600	7.1	2.7 – 17.1	1,600
10	7.2	2.8 – 17.5	2,500	7.3	2.8 – 17.5	2,500
11	6.0	1.9 – 17.5	1,000	7.8	2.9 – 19.4	1,300
12	8.4	3.8 – 17.6	2,300	8.5	3.8 – 17.7	2,300
13	5.0	0.80 – 25.8	800	9.8	3.0 – 28.1	1,500
14	8.5	1.6 – 34.6	1,700	14.2	4.4 – 36.9	2,800
15	13.6	4.1 – 36.6	1,300	18.9	7.2 – 41.2	1,700
16	5.5	1.5 – 18.5	2,400	11.3	4.4 – 26.0	4,900
17	8.6	2.7 – 24.5	1,400	10.4	3.7 – 25.5	1,700
18	5.7	1.4 – 20.6	700	5.7	1.4 – 20.6	700
19	4.3	0.6 – 25.0	500	4.4	0.7 – 24.3	500
20	4.8	0.7 – 26.8	300	5.0	0.8 – 26.2	300
21	3.2	0.8 – 11.9	600	5.1	1.8 – 13.9	900
22	9.9	1.4 – 45.1	2,100	10.1	1.5 – 44.8	2,200
JC	1.2	0.2 – 5.5	600	1.2	0.3 – 5.4	600
SL	2.6	0.7 – 9.2	2,100	5.3	2.1 – 12.4	4,200

Note: See Figure 2.1 for Service Area locations.

Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

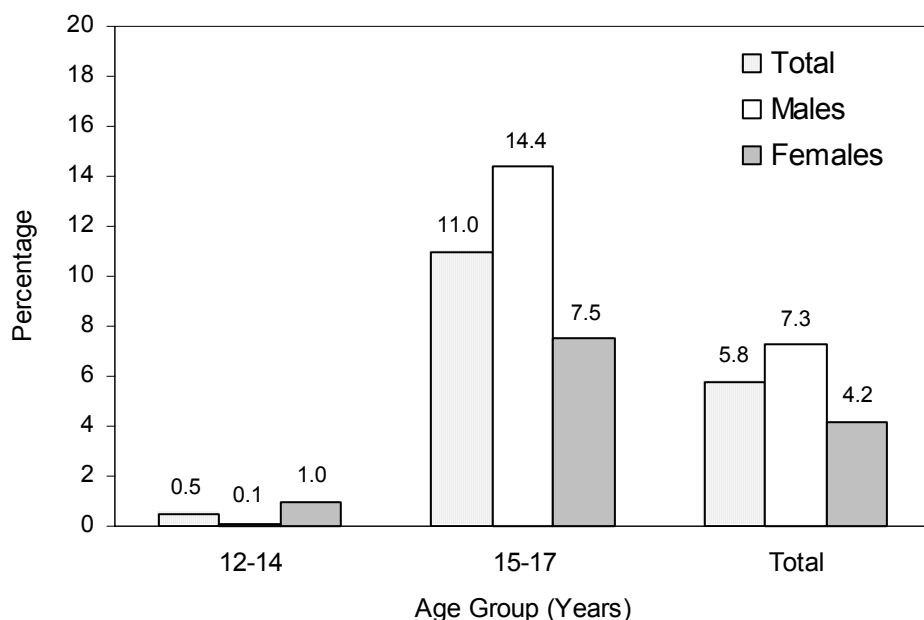
<sup>1</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>2</sup> Includes people who (a) were determined to need treatment (as described in footnote 1) or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

<sup>3</sup> The 95% CI = 95% confidence interval for the estimated percentage.

Source: Missouri Household Telephone Survey: 2001/2002.

**Figure 9.3 Past Year Prevalence of Missouri Adolescents in Need of Substance Abuse Treatment, by Gender and Age Group: 2001/2002**



Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

“Need of treatment” includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

Source: Missouri Household Telephone Survey: 2001/2002.

results (see Chapter 2 for a discussion of response rates and nonresponse bias).

Highlights from **Figures 9.3** and **9.4** and **Tables 9.5** and **9.6** include the following:

*Males were more likely than females to need treatment, and older adolescents aged 15 to 17 were more likely than young adolescents to need treatment.*

# An estimated 18,400 adolescent males and 10,100 adolescent females in the Missouri household population were identified as being in need of treatment for problems related to their use of alcohol or other drugs in 2001/2002. As shown by the confidence intervals for these estimates, however, there may have been as few as 12,000 or as many as 27,600 male adolescents in need of treatment. Similarly, there may have been as few as 5,700 or as many as 17,700 female adolescents in need of treatment.

# Need for alcohol or other drug treatment was more common among male adolescents than females. An estimated 7% of males in the adolescent household population in 2001/2002 were

**Table 9.5 Past Year Estimated Numbers of Missouri Adolescents in Need of Treatment, by Gender and Age Group: 2001/2002**

Age Group (Years)	Gender				Total <sup>3</sup>	
	Male		Female			
	Number <sup>1</sup>	95% CI <sup>2</sup>	Number <sup>1</sup>	95% CI <sup>2</sup>	Number <sup>1</sup>	95% CI <sup>2</sup>
12–14	100	0 – 300	1,200	300 – 4,600	1,300	400 – 4,500
15–17	18,300	12,100 – 26,800	9,000	4,900 – 16,100	27,200	19,400 – 37,800
Total	18,400	12,000 – 27,600	10,100	5,700 – 17,700	28,500	20,300 – 39,700

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

“Need of treatment” includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

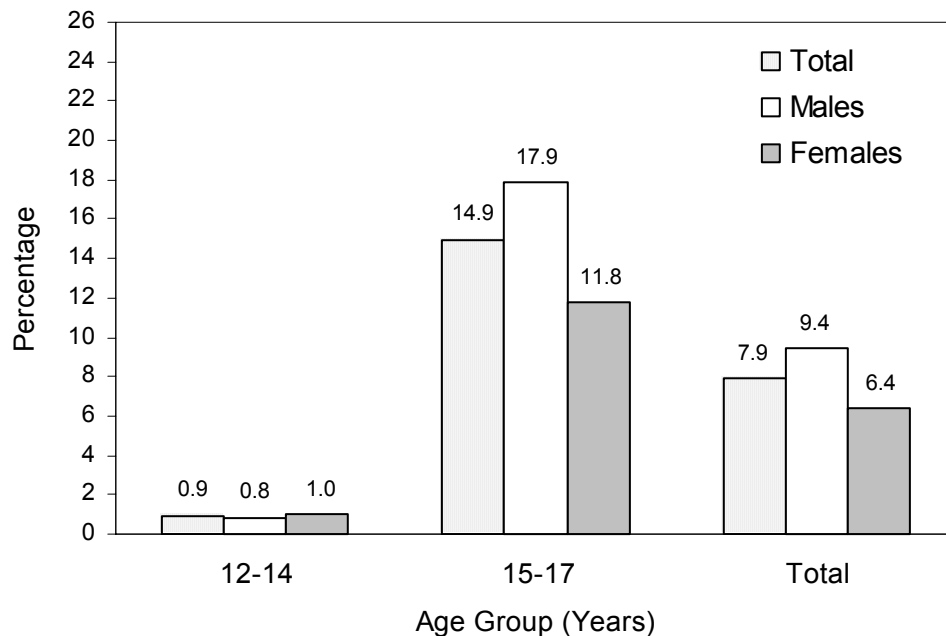
<sup>1</sup> Estimated number of people rounded to the nearest hundred.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimated number.

<sup>3</sup> Totals may differ slightly from the sum of the estimated numbers per age group because of rounding.

Source: Missouri Household Telephone Survey: 2001/2002.

**Figure 9.4 Past Year Prevalence of Missouri Adolescents in Need of Treatment or Intervention, by Gender and Age Group: 2001/2002**



Note: “Need of treatment or intervention” includes people who (a) were determined to need treatment or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” and “need for treatment or intervention” were defined.

Source: Missouri Household Telephone Survey: 2001/2002.

classified as being in need of treatment, compared with 4% of females. Adolescent males also had a higher rate of need for treatment or intervention (9%) compared with females (6%). Females aged 12 to 14 had slightly higher rates of need compared to males, but males aged 15 to 17 had higher rates of need than females.

- # Higher percentages of older adolescents aged 15 to 17 were in need of treatment and treatment or intervention compared with younger adolescents aged 12 to 14. About 14% of older adolescent males and 11% of older adolescent females in the household population were in need of treatment compared with 1% or less of adolescents aged 12 to 14. The same pattern was true of need for treatment or intervention, with 18% of older adolescent males and 15% of females needing services. This was consistent with the higher rates of alcohol and illicit drug use among older adolescents shown in Chapter 8.

**Table 9.6 Past Year Estimated Numbers of Missouri Adolescents in Need of Treatment or Intervention, by Gender and Age Group: 2001/2002**

Age Group (Years)	Gender				Total <sup>3</sup>	
	Male		Female			
	Number <sup>1</sup>	95% CI <sup>2</sup>	Number <sup>1</sup>	95% CI <sup>2</sup>	Number <sup>1</sup>	95% CI <sup>2</sup>
12–14	1,000	200 – 4,700	1,200	300 – 4,500	2,100	800 – 6,000
15–17	22,800	15,900 – 31,800	14,100	8,700 – 22,300	36,900	27,600 – 48,600
Total	23,700	16,500 – 33,700	15,300	9,500 – 24,200	39,000	29,300 – 51,700

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

“Need of treatment or intervention” includes people who (a) were determined to need treatment or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” and “need for treatment or intervention” were defined.

<sup>1</sup> Estimated number of people rounded to the nearest hundred.

<sup>2</sup> The 95% CI = 95% confidence interval of the estimated number of people.

<sup>3</sup> Totals may differ slightly from the sum of the estimated numbers of males and females because of rounding.

Source: Missouri Household Telephone Survey: 2001/2002.

### 9.3.2 Race/Ethnicity and Sex

**Tables 9.7** and **9.8** show prevalence estimates (in numbers and percentages) of substance abuse treatment and treatment or intervention need, respectively, according to race/ethnicity and sex for the Missouri adolescent household population as a whole.

Highlights from **Tables 9.7** and **9.8** include the following:

- # Approximately 6% of White and less than 1% of Black adolescents were in need of substance abuse treatment. Approximately 8% of White and 3% of Black adolescents were in need of treatment or intervention.
- # An estimated 24,000 White adolescents and 100 Black adolescents were in need of substance abuse treatment in the past year. About 33,000 White and 2,300 Black adolescents were in need of treatment or intervention. However, the confidence intervals show the range in which the true number of adolescents in need of treatment for each racial/ethnic group are likely to be found. For example, although 2,300 Black adolescents were estimated to need treatment or intervention, the true number is likely to fall between the lower bound estimate of 600 and 7,800.
- # White males (9%) had higher rates of treatment need than Hispanic males (1%), and Black males (0.1%). White males had higher rates of treatment need than White females (4%), whereas Black females (0.3%) had higher rates of need than Black males.
- # Rates of treatment and treatment or intervention need did not follow the same pattern for females by race or ethnic group. Approximately 4% of White and less than 1% of Black females were in need of past year substance abuse treatment services. However, 7% of Black females and 5% of White females were in need of treatment or intervention, indicating that although Black females did not meet the criteria for abuse or dependence they did exhibit symptoms and/or a problem pattern of use to require intervention.

### 9.4 Insurance Coverage and Benefits for Adolescents in Need of Treatment

As stated in Chapter 6, the ability (or inability) to pay for substance abuse treatment affects all Missouri residents. The parents or guardians of participating adolescents were asked if the adolescents were currently covered by a health or medical insurance plan.



**Table 9.7 Past Year Prevalence and Estimated Numbers of Missouri Adolescents in Need of Substance Abuse Treatment, by Gender and Race/Ethnicity: 2001/2002**

Racial/Ethnic Group	Gender						Total <sup>3</sup>		
	Male			Female					
	%	Number <sup>1</sup>	95% CI <sup>2</sup>	%	Number <sup>1</sup>	95% CI <sup>2</sup>	%	Number <sup>1</sup>	95% CI <sup>2</sup>
White	8.5	17,500	11,400 – 26,500	3.6	6,900	4,000 – 11,600	6.1	24,400	17,200 – 34,200
Black	0.1	0	0 – 200	0.3	100	0 – 700	0.2	100	0 – 600
Hispanic	1.1	100	0 – 500	*	*	*	*	*	*
Other <sup>4</sup>	*	*	*	*	*	*	*	*	*
Total	7.3	18,400	12,000 – 27,600	4.2	10,100	5,700 – 17,700	5.8	28,500	20,300 – 39,700

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

“Need of treatment” includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>1</sup> Estimated number of people rounded to the nearest hundred.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>3</sup> Totals may differ slightly from the sum of the estimated numbers of Whites, Blacks, Hispanics, and Others because of rounding.

<sup>4</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

\* Low precision; estimate not reported.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 9.8 Past Year Prevalence and Estimated Numbers of Missouri Adolescents in Need of Substance Abuse Treatment or Intervention, by Gender and Race/Ethnicity: 2001/2002**

Racial/Ethnic Group	Gender						Total <sup>3</sup>		
	Male			Female					
	%	Number <sup>1</sup>	95% CI <sup>2</sup>	%	Number <sup>1</sup>	95% CI <sup>2</sup>	%	Number <sup>1</sup>	95% CI <sup>2</sup>
White	10.9	22,500	15,500 – 32,200	5.2	9,900	6,000 – 16,200	8.2	32,500	24,000 – 43,600
Black	0.2	100	0 – 200	6.6	2,200	600 – 7,500	3.4	2,300	600 – 7,800
Hispanic	*	*	*	*	*	*	*	*	*
Other <sup>4</sup>	*	*	*	*	*	*	*	*	*
Total	9.4	23,700	16,500 – 33,700	6.4	15,300	9,500 – 24,200	7.9	39,000	29,300 – 51,700

Note: “Need for treatment or intervention” includes people who (a) were determined to need treatment or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” and “need for treatment or intervention” were defined.

<sup>1</sup> Estimated number of people rounded to the nearest hundred.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>3</sup> Totals may differ slightly from the sum of the estimated numbers of Whites, Blacks, Hispanics, and Others because of rounding.

<sup>4</sup> Includes American Indians, Alaska Natives, Asians, Native Hawaiians, Pacific Islanders, and those reporting multiple races/ethnicities.

\* Low precision; estimate not reported.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 9.9** shows estimates of health insurance coverage among the Missouri household adolescent population in need of treatment in the year before the 2001/2002 survey. Only about 1% of adolescents in the Missouri household population who were in need of treatment did not have health insurance coverage (as indicated by the parent or guardian giving parental consent for the adolescent to participate in the survey). However, even though nearly all adolescents in need of treatment were covered by health or medical insurance, we are unable to ascertain the percentage of adolescents with health insurance who did not have substance abuse treatment benefits or who did not have adequate coverage. Thus, the 1% of Missouri adolescents who lacked insurance to pay for treatment is certainly a conservative estimate.

## 9.5 Treatment History

**Figure 9.5** shows the percentages of the Missouri adolescent household population who had received assistance for substance use in their lifetime, as well as the percentages of adolescents in need of treatment who received treatment during these same time periods. **Table 9.10** shows the same percentages for the lifetime and past year, as well as the corresponding number of household adolescents. In particular, estimates of the percentages of adolescents in need of treatment or treatment or intervention in the past year who actually received such treatment indicate the “met need” for treatment. Conversely, then, low percentages of adolescents in need of treatment or treatment or intervention who actually received treatment or intervention could suggest a high “unmet need” for treatment services.

According to **Figure 9.5**, among all adolescents in the Missouri household population, less than 1% had ever received assistance outside formal treatment facilities in their lifetime for their use of alcohol or other drugs, including self-help groups (such as AA or Narcotics Anonymous [NA]), counseling from a psychologist or psychiatrist, or pastoral counseling. Less than 1% of the Missouri adolescent household population had ever received detoxification, residential treatment, treatment in a halfway house, or outpatient treatment.

Among adolescents estimated to be in need of treatment in the year before the survey, 3% had ever received some form of assistance in their lifetime, and 3% had received detoxification, residential treatment, treatment in a halfway house, outpatient treatment, or methadone maintenance in their lifetime. Approximately 3% had gone through outpatient treatment, and approximately 2% had been in a residential treatment program. Although these rates are higher than those for the adolescent household population as a whole, many adolescents who would currently be considered in need of treatment had never received formal treatment services for their substance abuse indicating a high unmet need for treatment services.

*Less than 1% of Missouri adolescents had ever received assistance or formal substance abuse treatment.*

*Among Missouri adolescents who needed substance abuse treatment in 2001/2002, about 3% had received assistance and formal treatment for their substance use at some point in their lives.*

**Table 9.9 Health Insurance Coverage among Adolescent Missouri Household Residents in Need of Treatment: 2001/2002**

Insurance Coverage	In Need of Treatment, Past 12 Months <sup>1</sup>		
	%	95% CI <sup>2</sup>	Number <sup>3</sup>
Yes	98.8	94.4 – 99.7	27,500
No	1.2	0.3 – 5.6	300

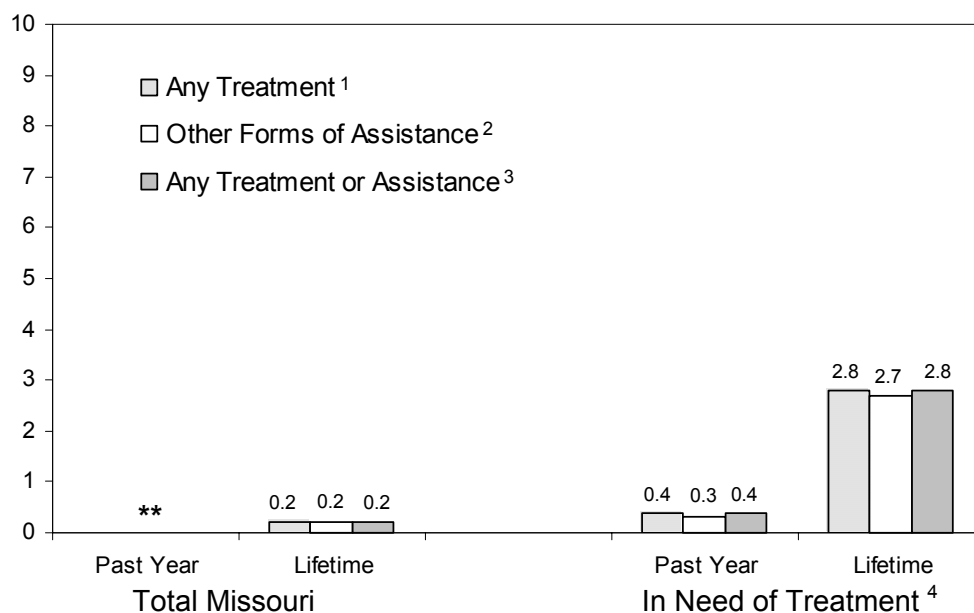
Note: Estimates are percentages of adolescents in need of treatment who were covered by a health or medical insurance plan as indicated by the parent or guardian who gave permission for the adolescent to complete the survey.

<sup>1</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>2</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>3</sup> Estimated number of people rounded to the nearest hundred.

Source: Missouri Household Telephone Survey: 2001/2002.

**Figure 9.5 History of Alcohol or Other Drug Treatment in the Past Year and the Lifetime in the Missouri Adolescent Household Population: 2001/2002**

\*\* Estimated percentage rounds to zero.

Note: Questions about treatment history were not asked of respondents who were lifetime abstainers of alcohol or other drugs.

<sup>1</sup> Includes detoxification, residential rehabilitation, halfway house or recovery house, or outpatient rehabilitation, or methadone maintenance.

<sup>2</sup> Includes substance abuse therapy or counseling outside a formal drug or alcohol program, such as through a mental health provider, attendance at self-help groups, receipt of pastoral counseling for substance abuse, or participation in programs for people arrested or convicted of operating a motor vehicle impaired.

<sup>3</sup> Any treatment, as defined in footnote 1, or any other form of assistance, as defined in footnote 2.

<sup>4</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 9.10 History of Alcohol or Other Drug Treatment in the Lifetime and Past Year in the Missouri Adolescent Household Population: 2001/2002**

Measure	Total Missouri <sup>1</sup>				In Need of Treatment <sup>2</sup>				In Need of Treatment or Intervention <sup>3</sup>			
	Lifetime		Past Year		Lifetime		Past Year		Lifetime		Past Year	
	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>	%	95% CI <sup>4</sup>
<b>Any Treatment</b>	0.2	0.0 – 0.6	**	**	2.8	0.8 – 9.5	0.4	0.1 – 1.1	2.1	0.6 – 7.0	0.3	0.1 – 0.8
Detoxification	**	**	**	**	0.1	0.0 – 0.7	0.1	0.0 – 0.7	0.1	0.0 – 0.5	0.1	0.0 – 0.5
Residential rehabilitation	0.1	0.0 – 0.6	**	**	1.5	0.2 – 9.8	**	**	1.1	0.2 – 7.1	**	**
Halfway or recovery house	**	**	**	**	0.1	0.0 – 0.7	0.1	0.0 – 0.7	0.1	0.0 – 0.5	0.1	0.0 – 0.5
Outpatient rehabilitation	0.2	0.0 – 0.6	**	**	2.7	0.7 – 9.6	0.2	0.1 – 1.0	2.0	0.5 – 7.1	0.2	0.0 – 0.7
Methadone maintenance	**	**	**	**	**	**	**	**	**	**	**	**
<b>Other Forms of Assistance</b>	0.2	0.0 – 0.6	**	**	2.7	0.7 – 9.6	0.3	0.1 – 0.9	2.0	0.6 – 7.0	0.2	0.1 – 0.6
Therapy/counseling outside a formal program	0.2	0.0 – 0.6	**	**	2.6	0.7 – 9.7	0.1	0.0 – 0.6	1.9	0.5 – 7.1	0.1	0.0 – 0.5
Self-help groups	0.1	0.0 – 0.6	**	**	1.6	0.3 – 9.3	0.1	0.0 – 0.9	1.2	0.2 – 6.9	0.1	0.0 – 0.6
Pastoral counseling	0.1	0.0 – 0.6	**	**	1.5	0.2 – 9.8	**	**	1.1	0.2 – 7.3	**	**
Drinking-driver program	**	**	**	**	**	**	**	**	**	**	**	**
<b>Any Treatment or Assistance<sup>5</sup></b>	0.2	0.0 – 0.6	**	**	2.8	0.8 – 9.5	0.4	0.1 – 1.1	2.1	0.6 – 7.0	0.3	0.1 – 0.8

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> Questions about treatment history were not asked of respondents who were lifetime abstainers of alcohol or other drugs.

<sup>2</sup> Includes people who (a) received formal treatment in the past 12 months or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>3</sup> Includes people who (a) were determined to need treatment (as described in footnote 2) or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

<sup>4</sup> The 95% CI = 95% confidence interval for the estimate.

<sup>5</sup> Any treatment or any other form of assistance. Individuals may report more than one type of treatment or assistance.

\*\* Estimated percentage rounds to zero.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 9.11** shows the estimated numbers of adolescents in the Missouri household population who were currently in need of treatment and who had received various forms of treatment or other assistance in their lifetime or in the year before the 2001/2002 survey.<sup>3</sup> Although more than 28,500 adolescents in the household population were estimated to be currently in need of treatment (see **Table 6.3**), these survey data indicate that only 100 of these adolescents had ever received formal treatment in the form of residential treatment, detoxification, services in a halfway house, outpatient treatment, or methadone maintenance in the past year, and 800 had received such treatment in their lifetime.

As with adults, ADA reports that 2,440 adolescents were served in 2001 and 2,796 were served in 2002. Again, this comparison indicates that estimates from the 2001/2002 Missouri Household Telephone Survey are significantly lower than ADA's official counts. This could be the result of underreporting because the survey was not self-administered and because the 2001/2002 Missouri survey does not include households without telephones and nonhousehold adolescents.

## 9.6 Levels of Care

Of the Missouri adolescents shown to be in need of treatment in 2001/2002, 31% were found to need outpatient treatment (ASAM Level I), 54% were in need of intensive outpatient treatment (Level II), an estimated 12% were in need of residential/inpatient treatment (Level III), and 3% needed medically managed treatment (Level IV) (**Table 9.12**). Males aged 12 to 17 were more likely to need residential/inpatient treatment (Level III) (16%), and females were more likely to need outpatient treatment (Level I) (17%).

## 9.7 Summary

Highlights regarding problems with substance use and the need for treatment and treatment or intervention among adolescents in the Missouri household population in 2001/2002 include the following:

- # The prevalence of specific problems associated with alcohol use in the past 12 months was higher than the prevalence of problems associated with use of other drugs. However, this finding is not surprising, given the much higher prevalence of alcohol use.
- # The most commonly occurring alcohol and illicit drug-related problems in the 12 months prior to the 2001/2002 telephone

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<sup>3</sup> Adults who received detoxification, residential treatment, services in a halfway house, outpatient treatment, or methadone maintenance in a formal substance abuse treatment facility were considered to be in need of treatment, regardless of whether they met diagnostic criteria for dependence or abuse.

**Table 9.11 Estimated Numbers of Missouri Adolescents in Need of Alcohol or Other Drug Treatment or Intervention Who Received Treatment in the Lifetime and Past Year: 2001/2002**

Measure	In Need of Treatment <sup>1</sup>				In Need of Treatment or Intervention <sup>2</sup>			
	Lifetime		Past Year		Lifetime		Past Year	
	Number	95% CI <sup>3</sup>	Number	95% CI <sup>3</sup>	Number	95% CI <sup>3</sup>	Number	95% CI <sup>3</sup>
<b>Any Treatment<sup>4</sup></b>	800	200 – 2,700	100	0 – 300	800	200 – 2,700	100	0 – 300
Detoxification	--	--	--	--	--	--	--	--
Residential rehabilitation	400	100 – 2,800	**	**	400	100 – 2,800	**	**
Halfway or recovery house	--	--	--	--	--	--	--	--
Outpatient rehabilitation	800	200 – 2,700	100	0 – 300	800	200 – 2,800	100	0 – 300
Methadone maintenance	**	**	**	**	**	**	**	**
<b>Other Forms of Assistance<sup>4</sup></b>	800	200 – 2,700	100	0 – 300	800	200 – 2,700	100	0 – 300
Therapy/counseling outside a formal program	700	200 – 2,800	--	--	800	200 – 2,800	--	--
Self-help groups	500	100 – 2,700	--	--	500	100 – 2,700	--	--
Pastoral counseling	400	100 – 2,800	**	**	400	100 – 2,800	**	**
Drinking-driver program	**	**	**	**	**	**	**	**
<b>Any Treatment or Assistance<sup>5</sup></b>	800	200 – 2,700	100	0 – 300	800	200 – 2,700	100	0 – 300

Note: Due to a skip error in the CATI, several respondents indicating more than one treatment episode were not asked to specify whether they received formal treatment services or other forms of assistance. As a result, they were included in the need for treatment or intervention estimates only and not in the need for treatment estimates because it was known they received either treatment or other forms of assistance but impossible to tell if the respondents received formal treatment only.

<sup>1</sup> Includes people who (a) received formal treatment in the past 12 months, or (b) met *DSM-IV* (1994) criteria for dependence or abuse for a given drug in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment” was defined.

<sup>2</sup> Includes people who (a) were determined to need treatment (as described in footnote 1) or (b) never met *DSM-IV* (1994) criteria for past year abuse or dependence for any drugs covered in the telephone survey, but who nevertheless met lifetime criteria for abuse or dependence and used that drug in the past 12 months, or did not meet the criteria for lifetime dependence or abuse but had a “problem” pattern of use in the past 12 months. See Chapter 2 for a detailed discussion of how “need for treatment or intervention” was defined.

<sup>3</sup> The 95% CI = 95% confidence interval, in thousands, for the estimated number of people.

<sup>4</sup> Because of the error described in the note, above, the numbers of adults receiving various forms of treatment and other assistance are underestimates.

<sup>5</sup> Any treatment or any other form of assistance. Individuals may report more than one type of treatment or assistance.

\*\* Estimated percentage rounds to zero.

-- Not available.

Source: Missouri Household Telephone Survey: 2001/2002.

**Table 9.12 ASAM Levels of Service Need among the Missouri Adolescent Household Population in Need of Treatment, by Age: 2001/2002**

Level of Care	Adults Currently in Need of Treatment								
	Males			Females			Total		
	%	95% CI	Number	%	95% CI	Number	%	95% CI	Number
Outpatient treatment (Level I)	*	*	*	16.5	6.1 – 37.8	1,700	31.1	16.9 – 50.1	8,900
Intensive outpatient (Level II)	*	*	*	*	*	*	54.0	37.0 – 70.2	15,400
Residential/inpatient treatment (Level III)	15.6	6.6 – 32.3	2,900	*	*	*	12.3	5.7 – 24.6	3,500
Medically managed intensive inpatient treatment (Level IV)	0.2	0.02 – 1.5	**	6.7	1.6 – 24.6	700	2.5	0.7 – 9.1	700

Note: See Chapter 2 for details regarding ASAM criteria.

\*Low precision; estimate not reported.

Source: 2001/2002 Missouri Household Telephone Survey.



survey were “used alcohol in larger amounts or for longer periods than intended” and “developed tolerance.”

- # About 4% of adolescents met criteria for past year alcohol or illicit drug dependence, and 2% met the criteria for alcohol or illicit drug abuse.
- # About 6% of adolescents in the Missouri adolescent household population in 2001/2002 were in need of substance abuse treatment, and 8% were in need of treatment or intervention.
- # Alcohol accounted for much of the need for treatment and treatment or intervention. Of the estimated 6% of adolescents in need of treatment, 5% specifically needed alcohol treatment. Of the 8% in need of treatment or intervention, almost 7% needed it specifically for alcohol.
- # Male adolescents were more likely than females to need treatment and treatment or intervention, and older adolescents aged 15 to 17 were more likely than younger adolescents to need treatment and treatment or intervention services.
- # About 3% of the adolescents in need of treatment had a lifetime history of treatment in the form of detoxification, residential treatment, services in a halfway house, outpatient treatment, or methadone maintenance. About 2% of adolescents in need of treatment or intervention had a lifetime history of receiving services.
- # Of the estimated 28,500 adolescents in need of treatment in the past year, only about 100 actually received detoxification, residential treatment, services in a halfway house, residential treatment, or methadone maintenance in the past year. Although this estimate is probably a conservative estimate of the number of adolescents in Missouri who received treatment services, this finding suggests a substantial difference between need for treatment and actual receipt of treatment services.
- # Of the Missouri adolescents in need of treatment services, nearly one-third were found to need outpatient treatment (ASAM Level I), and more than half (54%) were found to need intensive outpatient treatment (Level II).

The estimates presented here are only for the Missouri adolescent household population. Estimates may be conservative due to potential difficulties in finding substance users at home in order to conduct the telephone interview, people’s willingness to participate in a telephone interview, or their willingness to report sensitive behaviors such as alcohol- or other drug-related problems over the telephone.

## 10. Tobacco Use among Missouri Adolescents

This chapter presents findings on the prevalence of tobacco use among Missouri household adolescents. Past year use of tobacco, heavy cigarette use, and cigarette use by demographic characteristics are examined.

### 10.1 Tobacco Use by Missouri Adolescents

*Approximately 14% of Missouri adolescents, or about 71,000 adolescents, smoked cigarettes in the past year.*

As shown in **Table 10.1**, approximately 29% of Missouri adolescents smoked cigarettes during their lifetime. Approximately 15% of adolescents smoked cigarettes at some point in the 12 months prior to the 2001/2002 survey, and 8% did so in the past month. These estimates translate to 71,000 adolescents who had smoked cigarettes in the past year and 41,000 who smoked in the past month.

During the past year, 4% (or 20,000) of Missouri adolescents also reported using smokeless/chewing tobacco, and 7% (or 32,000) reported smoking cigars. Nearly one-fifth (or 89,000) of adolescents reported some kind of tobacco use in the past year, most of which was cigarette use.

According to **Figure 10.1**, a smaller percentage of Missouri adolescents were heavy smokers. Heavy smoking is defined as current smokers (smoked in the past month) who smoke one or more packs of cigarettes per day. The 2001/2002 Missouri Household Telephone Survey revealed that 7% of all Missouri household adolescents who were current smokers were heavy smokers (40,800 adolescents).

### 10.2 Past Year Cigarette Use by Demographic Characteristics

*Rates of past year cigarette use were higher among males, those aged 15 to 17, and White adolescents.*

With regard to percentages, adolescents who were male, aged 15 to 17, and White were most likely to have smoked cigarettes in the past year and to be heavy smokers (**Table 10.2**). Many of the groups that had higher rates of past year cigarette use also had higher rates of heavy alcohol and illicit drug use in the past year (see Chapter 8).

**Table 10.2** also shows the estimated numbers of cigarette users in different demographic subgroups. Although these data may be useful for those interested in identifying how many adolescents were smokers within a particular group, readers should use the *percentages* rather than the estimated numbers for making comparisons across groups. These percentages take into account the number of cigarette smokers in a

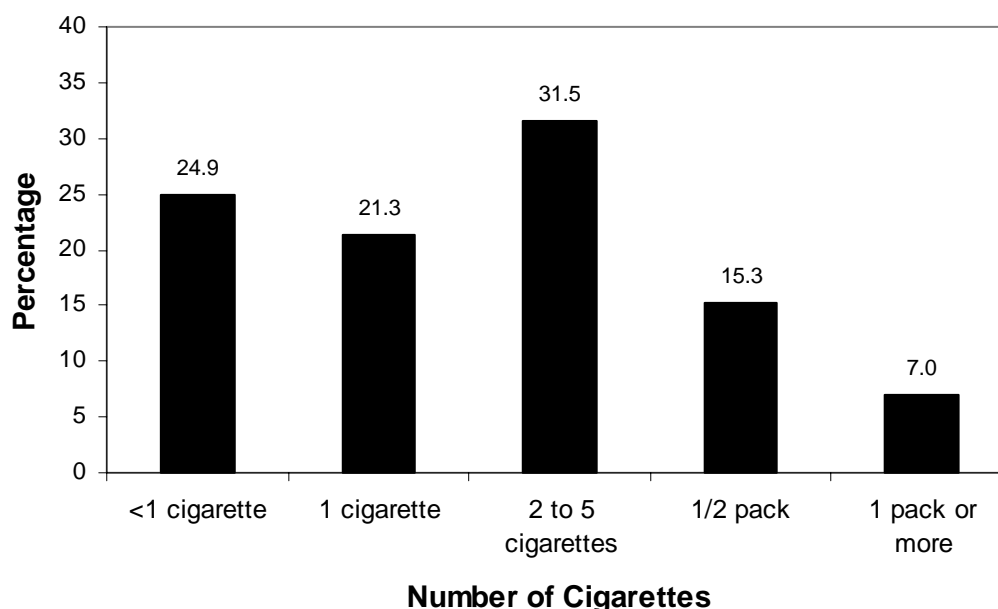
**Table 10.1 Prevalence of Use and Estimated Numbers of Tobacco Users in the Missouri Adolescent Household Population: 2001/2002**

Type of Tobacco	Lifetime			Past Year			Past Month		
	%	Number	95% CI <sup>1</sup>	%	Number	95% CI <sup>1</sup>	%	Number	95% CI <sup>1</sup>
Cigarettes	28.8	142,000	25.2 – 32.6	14.5	71,000	12.0 – 17.4	8.4	41,000	6.5 – 10.8
Smokeless/chewing tobacco	--	--	--	4.1	20,000	2.9 – 5.8	--	--	--
Cigars	--	--	--	6.5	32,000	4.8 – 8.7	--	--	--
Any Tobacco	--	--	--	18.1	89,000	15.3 – 21.3	--	--	--

<sup>1</sup> The 95% CI=95% confidence interval for the estimated percentage.

-- Not available

**Figure 10.1 Percentage of Past Month Cigarette Smokers Reporting Average Number of Cigarettes Smoked per Day in the Missouri Adolescent Household Population: 2001/2002**



Source: Missouri Household Telephone Survey: 2001/2002.

given subgroup relative to the overall size of that group in the entire adult household population.

Adolescent males were more likely than adolescent females to smoke cigarettes in the past year (17% vs. 12%, respectively). Males were also only somewhat more likely than females to have used alcohol heavily or to have used illicit drugs (see **Tables 8.2** and **8.4**).

As with alcohol and illicit drug use, older adolescents (e.g., 15- to 17-year-olds) were more likely to have used cigarettes in the past year (23%) and to smoke heavily (0.8%) than younger residents (e.g., 12- to 14-year-olds). White adolescents were more likely than Black adolescents to have smoked cigarettes in the past year (16% vs. 6%, respectively).

### 10.3 Age of First Cigarette Use

Missouri household adolescents were asked at what age they had first smoked a cigarette. Of Missouri adolescents aged 12 to 17 who reported smoking a cigarette at least once in their lives, most reported first smoking a cigarette at the age of 13 or 14 years (41%) (**Figure 10.2**). Approximately 13% reported being 10 years or younger the first

**Table 10.2 Prevalence of Use and Estimated Numbers of Past Year Cigarette Smokers (in Thousands) in the Missouri Adolescent Household Population, by Selected Demographic Characteristics: 2001/2002**

Demographic Characteristic	Any Cigarette Use in the Past Year <sup>1</sup>			Heavy Cigarette Use in the Past Year <sup>2</sup>		
	%	Number	95% CI <sup>3</sup>	%	Number	95% CI <sup>3</sup>
<b>Total Missouri</b>	14.5	71,400	59,000 – 85,800	0.6	2,900	1,300 – 6,500
<b>Region</b>						
Central	17.8	11,300	7,800 – 15,900	*	*	*
Eastern	12.6	22,800	15,100 – 33,900	**	**	**
Northwest	14.7	17,400	11,700 – 25,300	*	*	*
Southeast	16.5	10,100	7,000 – 14,300	2.6	1,600	700 – 3,900
Southwest	14.1	9,700	6,300 – 14,600	1.8	1,200	300 – 5,100
<b>Gender</b>						
Male	16.6	41,900	32,700 – 53,000	0.6	1,600	500 – 5,500
Female	12.3	29,500	21,900 – 39,400	0.5	1,300	500 – 3,400
<b>Age (years)</b>						
12–14	5.5	13,600	9,000 – 20,600	0.4	900	200 – 3,600
15–17	23.4	57,800	47,000 – 70,100	0.8	2,000	700 – 5,300
<b>Race/Ethnicity</b>						
White	15.7	62,500	51,600 – 75,200	0.7	2,900	1,300 – 6,500
Black	6.0	4,000	1,300 – 11,200	**	**	**
Hispanic	*	*	*	**	**	**
Other	*	*	*	*	*	*
<b>Student Status</b>						
In school	14.5	70,300	58,000 – 84,700	0.6	2,900	1,300 – 6,500
Not in school	*	*	*	*	*	*

Note: Unweighted numbers of respondents are shown in Table 3.2.

<sup>1</sup> Smoked cigarettes at least once in the past 12 months.

<sup>2</sup> Current smokers (i.e., smoked in the past 30 days) at the time of the survey who smoked one or more packs of cigarettes a day.

<sup>3</sup> The 95% CI = 95% confidence interval (in thousands) of the estimated numbers of cigarette users.

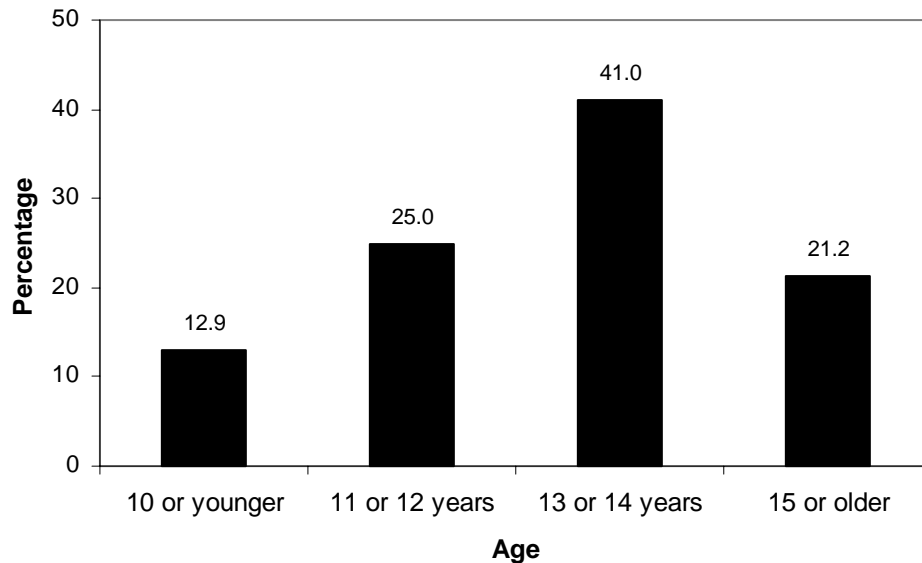
Source: Missouri Household Telephone Survey: 2001/2002.

time they smoked a cigarette, and 25% reported being 11 or 12 years old. Slightly more than one-fifth reported being 15 years of age or older.

#### 10.4 Number of Cigarettes Smoked Per Day

In addition to looking at the prevalence of use and the age of first use, it is important to examine the number or amount of cigarettes being smoked by adolescents. To assess this, the 2001/2002 Missouri Household Telephone Survey asked past month cigarette smokers the average number of cigarettes smoked per day in the past month.

**Figure 10.2 Percentage of Lifetime Cigarette Smokers Reporting Age of First Cigarette Use in the Missouri Adolescent Household Population: 2001/2002**



Source: Missouri Household Telephone Survey: 2001/2002.

As shown in **Figure 10.1**, the majority of household adolescents aged 12 to 17 reporting past month cigarette use smoked five or fewer cigarettes per day. Specifically, 25% reported smoking less than one cigarette per day, 21% reported smoking one cigarette per day, and 32% reported smoking two to five cigarettes per day. Approximately 15% of adolescents reported smoking about half a pack of cigarettes on average per day. Far less reported smoking a pack or more per day (7%).

*Most Missouri adolescents who had ever smoked reported first smoking a cigarette at the age of 13 or 14 years.*

## 10.5 Summary

About 18% of Missouri adolescents used tobacco products in the past year. Cigarette use constituted most of the tobacco use. Approximately 15% (or 71,000) of Missouri adolescents reported cigarette use in the year prior to the 2001/2002 survey, and 8% smoked in the previous month. Less than 1% were heavy smokers. Approximately 4% of adolescents used smokeless or chewing tobacco in the past year, and 7% used cigars.

Males were more likely than females, and older adolescents were more likely than younger adolescents, to have smoked in the past year and to smoke heavily. White adolescents were more likely than Black to have smoked in the past year.

Most adolescents reporting lifetime cigarette use reported first smoking a cigarette at the age of 13 or 14 years (41%). However, 13% reported

being 10 or younger, and 25% reported being 11 or 12 years old when first trying a cigarette.

The majority of adolescent past month cigarette smokers reported smoking five or fewer cigarettes per day on average (78%). Approximately 15% reported smoking half a pack per day on average, and 7% reported smoking a pack or more per day.

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## **Appendix A: Lead Letter**

July 23, 2001

Name  
Address  
City, State, zip

Your household has been selected at random to take part in an important telephone research survey on Missouri's health needs. This survey covers different health topics but looks mainly at alcohol and drug use and related behaviors. The purpose of the survey is to help us develop better treatment services.

Within the next two to three weeks, an interviewer from the Research Triangle Institute (RTI) will call your household. RTI, a well-known and respected research firm in North Carolina, is conducting this survey on behalf of the Missouri Department of Mental Health. Let me tell you how the survey will work.

- \$ Only one person, either an adult or a teenager (ages 12-17), from each household will be selected to participate in the survey. The person selected to participate in the survey can choose to take part or decline to participate, refuse to answer any question, and stop the interview at any time.
- \$ If a teenager is interviewed, permission must be received from a parent or guardian before talking with the teenager.
- \$ We have taken many steps to protect your privacy. We will ask for only the first name of the person being surveyed. The address file used to send this letter will be destroyed before interviews are conducted and will not be linked with any information gathered during the interview. Your telephone number will be erased from our records as soon as all interviews are completed and before the survey information is used.
- \$ Your individual answers will always be grouped with the information from other participants. Final results will always include this combined information so that individual answers cannot be identified.
- \$ The person we interview for this survey will not be re-contacted once we complete the interview.

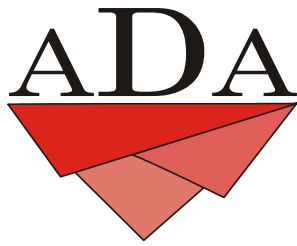
The survey does not ask questions about child abuse, but we may report it if we hear about it. We are also required to make a report if a child tells us he/she might hurt himself/herself or someone else.

If you have any questions about this survey, please call Lisa Carley-Baxter, Data Collection Task Leader, at the Research Triangle Institute, toll-free at 1-800-334-8571, extension 2616. If you have any questions about your rights as a research participant, please contact the Human Protections Office at 1-866-214-2043 (a toll-free number).

This survey is the best way to get good information about health problems in Missouri. Without this information we cannot decide what services are needed and where they should be made available. I hope you will be willing to help.

Sincerely,

Michael Couty  
Director, Division of Alcohol and Drug Abuse



## **Appendix B: Weighting and Nonresponse Adjustments**

The 2001/2002 Missouri Household Telephone Survey was a stratified two-phase, two stage sample of adults and adolescents living in households with telephones. In this appendix, we describe the weighting procedures used to make accurate estimates.

First, the probability that the telephone number was selected and released to TIO was calculated. As part of the interview, those households in the sample that were served by more than one phone number were identified. Using this information, the selection probabilities were adjusted to compensate for the fact that these households could have been selected via more than one phone number. Households that were served by only one residential telephone number did not require this adjustment to their selection probabilities. These steps gave the multiplicity-adjusted probability that a given household was selected in the sample. The inverse of this probability is the household sampling weight,  $W(1)$ .

Once a household was determined to be eligible, separate counts of adolescents,  $K(1)$ , and adults,  $K(2)$ , were obtained. To minimize the effect of extreme weighting, we did not allow either  $K(1)$  or  $K(2)$  to exceed three. In households containing both adolescents and adults, an adolescent interview was attempted with a high predetermined probability,  $P(1)$ , and an adult interview was selected with probability  $(1 - P(1))$ . The probability of attempting an adolescent interview,  $P(1)$ , was set to between 80% and 90% to greatly over-sample adolescents. In either case, one person was randomly selected with equal probability from the appropriate age category (12 to 17 or 18+). In households containing only adults, an adult was randomly selected with equal probability. The person selection probabilities within a given household containing one or more adolescents was

- If an adolescent selected:  $P(2|1) = P(1) / K(1)$
- If an adult selected:  $P(2|1) = [1 - P(1)] / K(2)$

The inverse of this probability is the conditional person sampling weight,  $W(2|1)$ . The combined sampling weight,  $W(2)$ , is the product of  $W(1)$  and  $W(2|1)$ .

As part of the screening process, interviewers try to determine the household status for each telephone number: either a known household or a known non-household. Due to hang-ups during introduction, refusals, and non-contacts, the household status cannot be determined for many cases. To adjust for unknown household status, within each stratum the weight-sums for cases with known household status were adjusted by the ratio,  $F(1)$ , of the weight-sum of all cases and the weight-sum of cases with known household status. The adjustment factor for cases with unknown household status was set to zero. The unknown household status adjusted weight,  $W(3)$ , was calculated as the product of  $W(2)$  and  $F(1)$ .

To account for differential response rates among the strata, the weights were adjusted for nonresponse separately for each stratum. The nonresponse adjustment factor,  $F(2)$ , was calculated within each stratum as the ratio of the weight-sum of all known households and the weight-sum of households completing an interview. The adjustment factor for nonresponding households was set to zero. The nonresponse adjusted weight,  $W(4)$ , was calculated as the product of  $W(3)$  and  $F(2)$ .

Many households have more than one residential telephone number assigned to their household, giving those households more than one chance of being selected. To adjust for multiple chances of selection, we set the multiple telephone factor,  $F(3)$ , to the number of different residential telephone numbers with a maximum of two (2). The multiple telephone adjusted weight,  $W(5)$ , was calculated as the product of  $W(4)$  and  $F(3)$ .

Because of the differential sampling rates and subsequent weight adjustments, some weights were either extremely large or small. These extreme weights would greatly increase variances of response variables. To minimize the unequal weighting effect, the extreme weights were truncated towards the average (of  $W(5)$ ) weight separately within each stratum. The truncated weights,  $W(6)$ , were calculated separately within each stratum using the following algorithm.

- If  $W(5) > 4.0 * \text{Average}[W(5)]$ , then  $W(6) = 4.0 * \text{Average}[W(5)]$ .
- If  $W(5) < \text{Average}[W(5)] / 4.0$ , then  $W(6) = \text{Average}[W(5)] / 4.0$
- Otherwise,  $W(6) = W(5)$ .

The above sampling weights were calculated based on the four sampling strata formed as part of the study design. In construction of the sampling frame, each telephone exchange was assigned to a county (called the *assumed* county) based on the location of the plurality of listed households in that exchange. Many exchanges serve households in more than one county. In order to assign the respondent to the correct county, respondents were asked during the interview to provide the county (called the *respondent* county) and ZIP code in which they reside. Using the *assumed* county, the *respondent* county, and the ZIP code, an *assigned* county was determined for each respondent. The *assigned* county was used to assign the respondents to the five ADA regions.

To adjust the sampling weights for noncoverage, population estimates were obtained from the 2000 Census Summary File 1 (SF1) population counts for Missouri counts by age break (12-14, 15-17, 18-21, 22-24, 25-34, 35-44, 45-54, 55-64, 65+) by sex by race/ethnicity (male, female remaining categories). Using these Census population estimates, region by race by sex by age weighting controls were formed. The race controls varied by stratum as shown below.

- Central Region: race (non-Hispanic white, other) by gender
- Southeast Region: race (non-Hispanic white, other) by gender
- Southwest Region: race (white, other) by gender
- Eastern Region: race (non-Hispanic white, non-Hispanic black, other) by gender
- Northwest Region: race (non-Hispanic white, non-Hispanic black, other) by gender
- Central Region: age (12-14, 15-17, 18-24, 25-34, 35-44, 45-54, 55-64, 65+) by gender
- Southeast Region: age (12-14, 15-17, 18-24, 25-34, 35-44, 45-54, 55-64, 65+) by gender
- Southwest Region: age (12-14, 15-17, 18-24, 25-34, 35-44, 45-54, 55-64, 65+) by gender
- Eastern Region: age (12-14, 15-17, 18-24, 25-34, 35-44, 45-54, 55-64, 65+) by gender
- Northwest Region: age (12-14, 15-17, 18-24, 25-34, 35-44, 45-54, 55-64, 65+) by gender



Tables B.1 and B.2 provides the region by sex by age break population estimates.

**Table B.1. Population Estimates for Selected Race Breaks by Gender by Region**

Region	Race	Male	Female	Total
Central	White	278,419	290,807	569,226
	Other	31,625	26,205	57,830
Southeast	White	256,590	274,248	530,838
	Other	17,977	18,425	36,402
Southwest	White	309,332	333,931	643,263
	Other	20,498	18,517	39,015
Eastern	White	619,958	670,995	1,290,953
	Black	129,988	166,339	296,327
	Other	34,678	35,536	70,214
Northwest	White	445,414	477,495	922,909
	Black	61,106	71,628	132,734
	Other	36,152	34,482	70,634
<b>Total</b>		<b>2,241,737</b>	<b>2,418,608</b>	<b>4,660,345</b>

**Table B.2. Population Estimates for Gender by Selected Age Category**

Region	Sex	Age Category							
		12-14	15-17	18-24	25-34	35-44	45-54	55-64	65+
Central	Male	16,031	16,375	46,661	50,357	57,506	47,839	32,596	42,679
	Female	15,177	15,633	43,159	46,389	55,300	47,718	34,214	59,422
Southeast	Male	15,548	16,278	31,513	39,798	49,573	43,736	33,686	44,435
	Female	14,688	15,042	29,708	40,208	50,311	44,727	36,062	61,927
Southwest	Male	17,672	18,086	41,126	51,452	59,757	51,982	38,822	50,933
	Female	16,601	16,595	42,257	50,883	60,655	54,185	41,643	69,629
Eastern	Male	46,620	45,686	85,475	131,230	163,026	131,382	81,456	99,749
	Female	44,487	44,043	88,223	138,657	171,603	142,030	90,709	153,118
Northwest	Male	30,359	30,522	63,798	94,894	109,535	87,413	56,712	69,439
	Female	28,827	28,556	64,058	94,865	110,303	91,450	61,498	104,048
<b>Total</b>		<b>246,010</b>	<b>246,816</b>	<b>535,978</b>	<b>738,733</b>	<b>887,569</b>	<b>742,462</b>	<b>507,398</b>	<b>755,379</b>

At the state-level, the weight-sums were adjusted to agree with the following control totals.

- gender (male, female) by age break (12-14, 15-17, 18-24, 25-34, 35-44, 45-54, 55-64, 65+) as shown in Table B.3.
- Race/ethnicity (non-Hispanic white, non-Hispanic black, other) by age break (12-14, 15-17, 18-24, 25-34, 35-44, 45-54, 55-64, 65+) shown in Table B.4.
- gender (male, female) by race/ethnicity (Hispanic, non-Hispanic black, non-Hispanic white, non-Hispanic Native American, other) as shown in Table B.5.

These adjustments compensate for the fact that the demographic distribution of households with telephones is different from that of the entire Missouri population and also for the fact that some region, age, sex, race/ethnic groups cooperated with the survey at lower rates than did others. All tabulations used these fully adjusted analysis weights.

**Table B.3 Population Estimates for Sex by Age Break at the State-Level**

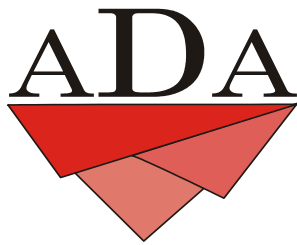
<b>Age Break</b>	<b>Sex</b>		<b>Total</b>
	<b>Male</b>	<b>Female</b>	
12-14	126,230	119,780	246,010
15-17	126,947	119,869	246,816
18-24	268,573	267,405	535,978
25-34	367,731	371,002	738,733
35-44	439,397	448,172	887,569
45-54	362,352	380,110	742,462
55-64	243,272	264,126	507,398
65+	307,235	448,144	755,379
<b>Total</b>	<b>2,241,737</b>	<b>2,418,608</b>	<b>4,660,345</b>

**Table B.4. Population Estimates for Race/Ethnicity by Age Break at the State-Level**

<b>Age Break</b>	<b>Race/Ethnicity</b>			<b>Total</b>
	<b>Non-Hispanic White</b>	<b>Non-Hispanic Black</b>	<b>Other</b>	
12-14	197,746	34,119	14,145	246,010
15-17	199,758	32,926	14,132	246,816
18-24	430,923	67,290	37,765	535,978
25-34	598,717	90,727	49,289	738,733
35-44	750,030	97,432	40,107	887,569
45-54	643,790	70,823	27,849	742,462
55-64	449,170	42,441	15,787	507,398
65+	687,055	53,447	14,877	755,379
<b>Total</b>	<b>3,957,189</b>	<b>489,205</b>	<b>213,951</b>	<b>4,660,345</b>

**Table B.5 Population Estimates for Sex by Race/Ethnicity at the State-Level**

<b>Race/Ethnicity</b>	<b>Sex</b>		<b>Total</b>
	<b>Male</b>	<b>Female</b>	
Non-Hispanic Native American	9,900	9,605	19,505
Non-Hispanic Black	223,755	265,450	489,205
Non-Hispanic White	1,909,713	2,047,476	3,957,189
Hispanic	46,934	41,234	88,168
Non-Hispanic Other	51,435	54,843	106,278
<b>Total</b>	<b>2,241,737</b>	<b>2,418,608</b>	<b>4,660,345</b>



## **Appendix C: ASAM Dimensions**

This appendix describes how Missouri telephone survey data were scored with respect to the American Society of Addiction Medicine (ASAM) patient placement criteria (PPC-2) based on an algorithm that had been developed by the National Technical Center for Substance Abuse needs Assessment (NTC; Morey, McAuliffe, & Miller, 1995). The program was originally developed as a Statistical Package for the Social Sciences (SPSS) program for use with variable names developed by the NTC for use with the NTC instrument. For this report, analyses were conducted using the Statistical Analysis System (SAS) statistical software package, and relevant variables were renamed based on their names in the Missouri telephone survey dataset.

In conducting these analyses, the ASAM criteria were applied only to Missouri telephone survey respondents who were identified as currently being in need of treatment. For scoring purposes, missing values (e.g., responses of “don’t know,” “refuse,” or “blank” values due to breakoffs) were treated as negative (i.e., no occurrence of a problem).

The following text presents the relevant measures for each of the four ASAM levels of treatment services.

### **Level I: Outpatient Treatment**

Respondents could be considered potentially appropriate for outpatient treatment if the following were observed in their survey responses:

- (a) There was no evidence of acute intoxication or risk of severe withdrawal, as indicated by the following:
  - no opiate use and no sedative use in the past 12 months; or
  - (b) no opiate withdrawal in the lifetime; or (c) if withdrawal occurred, the last opiate withdrawal was more than 12 months ago; or (d) any opiate withdrawal in the past 12 months was mild withdrawal in the past 12 months;
  - no lifetime alcohol withdrawal symptoms reported or any that were reported were mild, and there was no associated use of sedatives in the past year;
  - no frequent use of cocaine in the past year (i.e., use was less than weekly in the past year and the respondent used on fewer than 15 of the 30 days prior to the interview);
  - previous detoxification with no reported entry into residential treatment, and the respondent reported entering outpatient treatment immediately after he or she went through detoxification;

- available transportation and an environment where people in the living environment and co-workers do not use alcohol or drugs; and
- (b) There was no evidence of medical conditions that would interfere with treatment on an outpatient basis, as indicated by
- the respondent reporting good physical health;
  - no reports of physical problems in the past year that were related to the respondent's use of alcohol or other drugs;
  - no reports of alcohol or other drug-related hospitalizations; and
  - (if female) not being pregnant in the past year, or being pregnant and having received prenatal care.
- (c) There was no evidence of any coexisting psychological or emotional problem (other than symptoms that might be directly related to substance abuse, such as drug-induced anxiety or depression) that would interfere with outpatient treatment, as indicated by
- the reported emotional health was fair or good, or
  - if the respondent reported poor emotional health, the respondent also attributed emotional problems to his or her substance use;
  - no reported alcohol- or other drug-related hospitalizations in the past year, and no reported use in hazardous situations (i.e., suggesting that the respondent is a minimal risk of harming him/herself or others).
- (d) There is minimal risk of relapse, as indicated by no indication of the respondent being on a waiting list to enter treatment but changing his or her mind in the interim (i.e., suggesting a commitment to seek treatment and then follow through).
- (e) The respondent's environment appears to be supportive of efforts to recover or the respondent is willing to take steps to create a supportive environment, as indicated by
- the respondent reporting that there is no use of alcohol or other drugs in the home or among co-workers, and others are supportive of the respondent's treatment; or

- the respondent has attended self-help groups in the past year or expressed a need or willingness to attend self-help groups.

As indicated in Chapter 4, Level I also included criteria related to respondents' motivation to receive treatment. In the NTC algorithm, this was defined in terms of respondents having sought treatment in the past year, having sought additional treatment, or feeling the need for treatment, with an intention to seek it. Because relatively few Georgia telephone survey respondents who were in need of treatment actually received services in the past year or felt the need for treatment, this particular dimension would have classified most of these respondents as being "resistant" and, therefore, not appropriate for outpatient treatment. Consequently, it was thought that this dimension of "treatment acceptance/resistance" may not be as pertinent for a survey of the general household population as it would be in a clinical interview in a treatment setting. When this "treatment acceptance/resistance" criterion was taken out of the scoring criteria for outpatient treatment, the ASAM results were more congruent with the dependence severity data and with the professional experience of staff within the state.

## **Level II: Intensive Outpatient/Partial Hospitalization**

Respondents could be considered potentially appropriate for intensive outpatient treatment or partial hospitalization if the following were observed in their survey responses:

- (a) Similar to Level I, there was no evidence of the respondent being at risk of severe withdrawal, as indicated by the following:
  - no opiate use and no sedative use in the past 12 months; or (b) no opiate withdrawal in the lifetime; or (c) if withdrawal occurred, the last opiate withdrawal was more than 12 months ago; or (d) any opiate withdrawal in the past 12 months was mild in the past 12 months;
  - no lifetime alcohol withdrawal symptoms reported or no severe symptoms;
  - nonmedical use of sedatives less than weekly in the past year and no evidence of heavy alcohol use in the past year and no history of dependence on alcohol, cocaine, opiates, or hallucinogens, with dependence symptoms occurring in the past year;
  - no frequent use of cocaine in the past year;

- not dependent on heroin or other opiates and used opiates on less than 15 of the 30 days prior to the interview (if at all); and
  - no reports of major alcohol- or other drug-related physical problems in the past year and no alcohol or other drug-related hospitalizations in the past year (see criterion (b) above in connection with ASAM Level I).
- (b) If there was evidence of medical problems, they are not severe enough to interfere with treatment; if the respondent reported any of the following, these data were interpreted to indicate the presence of a severe medical problem that could interfere with treatment:
- poor physical health, with alcohol- or other drug-related problems occurring in the past year;
  - any alcohol- or other drug-related hospitalization in the past year;
  - (if female) being pregnant in the past year and also being dependent on alcohol, opiates, or sedatives; and
  - presence of a physical health problem that could make detoxification dangerous.
- (c) If there was some evidence of a coexisting psychological or emotional problem, it does not appear to be severe enough to seriously interfere with treatment on a primarily outpatient basis; if the respondent reported any of the following, these data were interpreted to indicate the presence of a behavioral problem that could interfere with treatment:
- hospitalization for emotional or behavioral problems in the past year or
  - does not meet criteria for dimension (c) under ASAM Level I (see above), suggesting the presence of an emotional problem that could interfere with treatment.
- (d) Some evidence of a high likelihood of relapse if treated without close monitoring on an outpatient basis, as indicated by
- current dependence on any of the drugs covered in the survey and

- no evidence of receiving treatment or wanting treatment in the past year.
- (e) Presence of an environment that is not conducive to recovery, as indicated by
- use of alcohol or other drugs by co-workers or in the respondent's living situation or
  - others are not supportive of the respondent receiving treatment.

As with Level I, criteria for Level II were scored without the “treatment acceptance/resistance” dimension. In the NTC algorithm, respondents were considered to be appropriate for this level of care with respect to the acceptance/resistance dimension if they met current criteria for dependence and did not receive treatment in the past year, did not feel that treatment was needed in the past year, and did not meet Level I criteria for treatment acceptance. In addition, the criterion about successful completion of detoxification on an outpatient basis was not included because the telephone survey questionnaire did not ask respondents to distinguish between detoxification on an outpatient basis or in other settings.

### **Level III: Medically Monitored Inpatient Treatment**

Respondents could be considered potentially appropriate for medically monitored inpatient treatment or partial hospitalization if the following were observed in their survey responses:

- (a) There is some risk of severe withdrawal, but it would appear to be manageable in a medically monitored inpatient setting, as indicated by
- respondents reported more than a slight level of severity with respect to alcohol withdrawal;
  - daily use of sedatives or alcohol;
  - daily cocaine use; and
  - detoxification in the lifetime with no history of entering residential or outpatient treatment.
- (b) Some evidence of biomedical conditions requiring monitoring (but not necessarily close medical supervision), as indicated by



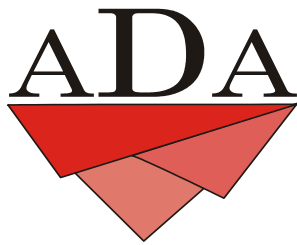
- reported poor physical health with physical problems attributable to substance use, but no hospitalizations for these problems;
  - (if female) pregnant with current dependence on a drug other than alcohol, opiates, or sedatives/tranquilizers (e.g., marijuana, hallucinogens); and
  - has a physical health problem that would make detoxification medically dangerous.
- (c) Some evidence of emotional or behavioral problems that would preclude treatment at less intensive levels, but not serious enough to require emergency hospital treatment, as indicated by
- respondents not meeting criteria (c) for Level I or II (see above) and
  - no reports of past year hospitalizations for emotional problems related to alcohol or other drug use.
- (d) Current symptoms of dependence or indeterminate history of dependence with use in the past year, and the respondent does not see the need for treatment, as indicated by
- no treatment in the past year and no perceived need for treatment, with either of the above indicated.
- (e) High risk for relapse, as indicated by unsuccessful attempts to stop or control drinking or other drug use.
- (f) Respondent lives in an environment where treatment is likely to fail or where significant access problems would make treatment difficult at less intensive levels, as indicated by
- alcohol or other drug use by others at home;
  - reports of people being abusive at home; and
  - no transportation to treatment.

In the Level III algorithm, the criterion of use of sedatives above therapeutic doses was not measured because the questionnaire asked about frequency of use but did not ask about the amount of sedatives or tranquilizers ingested.

**Level IV: Medically Managed Inpatient Treatment**

Respondents could be considered potentially appropriate for medically managed inpatient treatment or partial hospitalization if the following were observed in their survey responses:

- (a) History of severe withdrawal or chronic intoxication, as indicated by
  - reports of severe withdrawal from alcohol or other drugs;
  - a reported history of the “DTs”;
  - history of daily opiate use use; and
  - history of lifetime detoxification with no report of receiving treatment in a residential setting, in a halfway house, or as an outpatient.
- (b) Presence of biomedical conditions that could require medical management and skilled nursing care, as indicated by
  - physical problem attributed to alcohol or other drug use and
  - hospitalization for an alcohol- or other drug-related physical problem in the past year.
- (c) Presence of emotional or psychological problems that could require medical management and skilled nursing care, as indicated by
  - emotional problem attributed to alcohol or other drug use
  - Pregnant within past year and experienced withdrawal symptoms and
  - hospitalization for an alcohol- or other drug-related emotional problem in the past year.



## **Appendix D: Suppression Rule**

This appendix describes the rule used in this report to suppress unreliable prevalence estimates (i.e., rates that cannot be reported with confidence because they are based on small sample sizes or have large sampling errors).

The suppression rule used specified that estimates should be suppressed and shown as a single asterisk (\*) when:

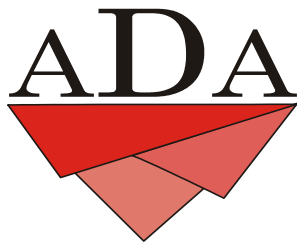
- (a) the number of cases in the *denominator* was less than 30; or
- (b) if an estimate was based on 30 or more cases in the denominator, it failed to pass the rule below, using the RSE of the natural log of the estimate  $p$ , where  $p$  is a proportion.

If an estimate was based on 30 or more cases in the denominator, the rule specified that the estimate should be suppressed if

$$\begin{aligned} \text{RSE} [-\ln(p)] &> .275 \quad \text{for } p \leq .5 \\ \text{RSE} [-\ln(1-p)] &> .275 \quad \text{for } p > .5 \end{aligned}$$

For computational purposes, note that  $\text{RSE}[-\ln(p)] = \text{RSE}(p)/[-\ln(p)] = \text{SE}(p)/[-p \ln(p)]$ , where  $\text{SE}(p)$  denotes the standard error of  $p$ , the estimated proportion.

In addition, note that the sample size requirement for publishing estimates applied to the number of cases in the *denominator*, not the number of cases in the *numerator*. For example, if fewer than 30 respondents in the entire sample reported a particular behavior (e.g., use of heroin or other opiates in the 12 months prior to the survey), the estimate could still be considered reliable if it passed the requirement based on the RSE of the natural log of the estimate.



## **Appendix E: DSM-III-R Criteria**

## E.1 Symptoms of Dependence and Abuse

Regardless of whether people actually received treatment, one group of people in Maine who would clearly be in need of substance abuse treatment services would be people who continued to use a given drug (e.g., alcohol, marijuana), even though that drug was causing them serious health problems or serious problems in their social functioning (e.g., relationship problems, problems at work or school). Few people would question the need to offer substance abuse treatment services or other help to someone who was unable to stop using a drug on his or her own despite the amount and seriousness of the problems that use of this drug was causing.

The American Psychiatric Association (APA) has established criteria for psychoactive substance dependence or abuse that have been widely used as a standard for identifying people with serious problems, based on significant impairment in multiple domains of their lives. These criteria have been updated periodically and published in diagnostic manuals, such as the third revised edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) (APA, 1987), and the more recent fourth edition of this manual (DSM-IV) (APA, 1994). The Maine Household Telephone Survey questionnaire measured symptoms of dependence or abuse based on the DSM-III-R (1987) criteria.

For a person to meet lifetime DSM-III-R (1987) diagnostic criteria for psychoactive substance dependence, three or more of the following symptoms need to have occurred in a person's lifetime:

1. use of a substance in larger amounts or over a longer period than intended;
2. persistent desire or one or more unsuccessful efforts to cut down or control substance use;
3. great deal of time spent getting the substance, taking the substance, or recovering from its effects;
4. frequent intoxication or withdrawal symptoms when expected to fulfill major role obligations, or when substance use is physically hazardous (e.g., operating a motor vehicle under the influence of alcohol or other drugs [OUI]);
5. avoidance of important activities because of substance use;
6. continued substance use despite knowledge of persistent or recurrent problems caused or exacerbated by substance use;
7. marked tolerance (i.e., need for larger amounts of the substance to produce the desired effect);
8. characteristic withdrawal symptoms; and
9. use of the substance to relieve or avoid withdrawal symptoms.

Some of the symptoms need to have persisted for at least 1 month or to have occurred repeatedly for an extended period of time.

The DSM-III-R (1987) category of psychoactive substance abuse is a residual category for people who have never met the criteria for a diagnosis of dependence. Among people who have never met dependence criteria, a pattern of substance abuse is characterized by:

1. continued substance use despite knowledge of persistent or recurrent problems caused or exacerbated by substance use, or
2. recurrent use in hazardous situations (e.g., OUI).

As for substance dependence, for a person to meet the diagnostic criteria for abuse, some of these symptoms need to have persisted for at least 1 month or to have occurred repeatedly for an extended period of time.

**Figure E.1** shows how treatment need could be determined based on the DSM-III-R (1987) diagnostic criteria and other factors. The box labeled **\*1\*** consists of people who:

- # met lifetime DSM-III-R (1987) dependence or abuse criteria for alcohol or another drug, as described above;
- # used the substance of interest at least once in the past 12 months; and
- # had one or more symptoms of dependence or abuse in the past 12 months.

As noted in Figure E.1, people who met these conditions would be considered in need of treatment services in the past 12 months (McAuliffe et al., 1995). Stated another way, people who met the conditions for Box **\*1\*** (a) have had a significant lifetime history of substance abuse problems, (b) have recently used the substance that caused them problems, and (c) have had one or more recent problems related to their continued use of that substance.

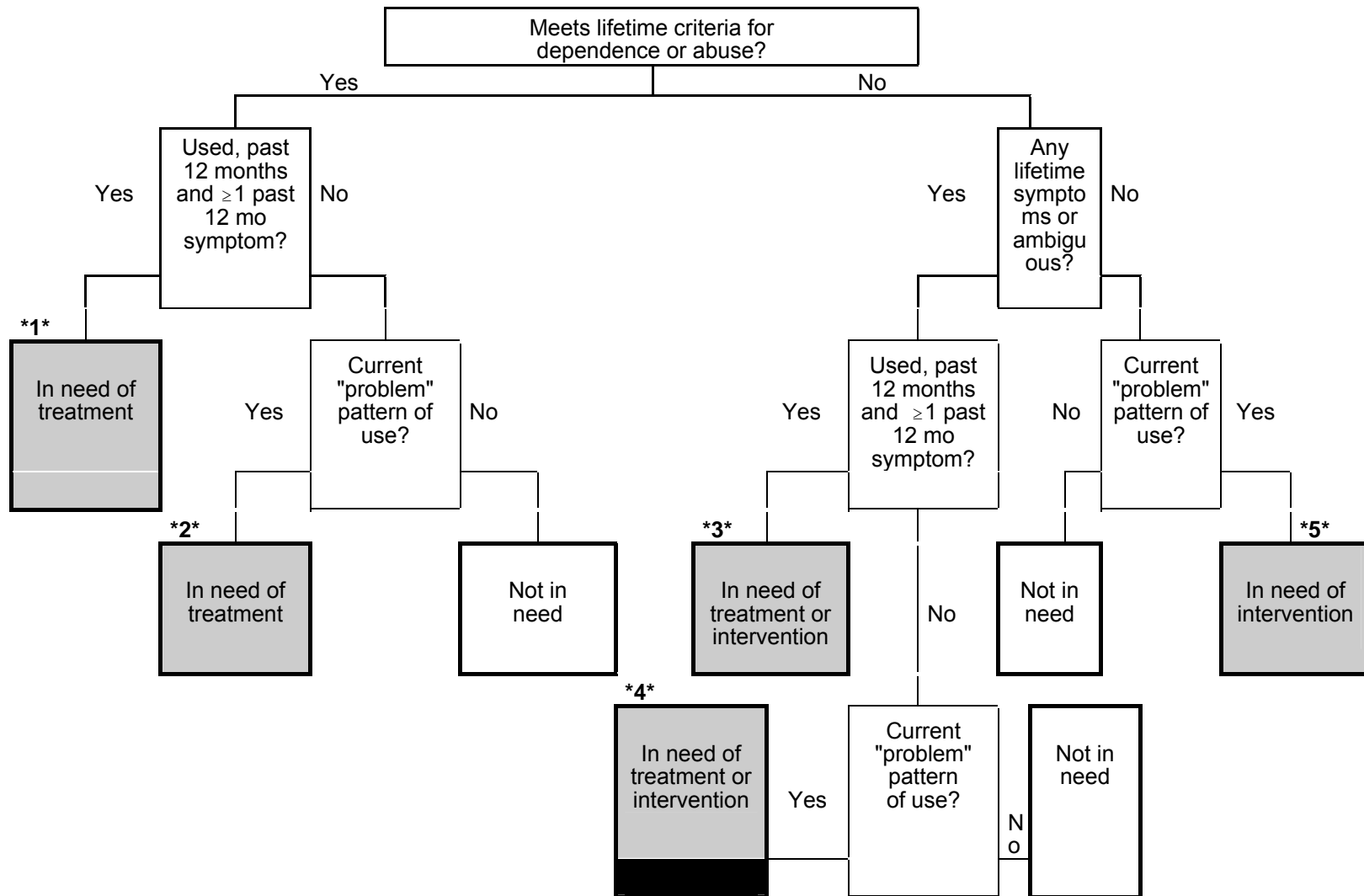
## E.2 Problem Patterns of Use

However, sole reliance on symptoms of dependence or abuse for establishing treatment need in Maine could be too stringent and might miss a group of people in need of treatment. Some people who might have a lifetime history of dependence or abuse might deny the existence of recent problems (i.e., problems in the past 12 months), even though they might be exhibiting patterns of frequent or heavy substance use that would be considered problematic. For example, consumption of eight or more drinks of an alcoholic beverage in a single day<sup>1</sup> would probably be indicative of “problem” alcohol use, even if a person denied that this level of heavy consumption was causing any current problems.

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<sup>1</sup>Consumption of eight or more drinks in a single day would be equivalent to consumption of more than a six-pack of beer, more than a bottle of wine, or about : pint of liquor.

**Figure E.1 Criteria for Determining Need for Treatment or Intervention**



Source: Maine Household Telephone Survey: 1997.



Box \*2\* in Figure E.1 consists of people who:

- # met lifetime DSM-III-R (1987) dependence or abuse criteria for alcohol or another drug, as described above, and
- # exhibited a "problem" pattern of use, as described below.

As with people meeting the definitions for Box \*1\*, people who had a lifetime diagnosis of dependence or abuse would be considered in need of treatment services if they reported a current "problem" pattern of substance use. Even if they denied that such use was causing them problems. That is, a current "problem" pattern of consumption in conjunction with a lifetime history of dependence or abuse would suggest relapse and the need for treatment. People were defined as having a current "problem" pattern of alcohol use if they indicated any of the following:

- # an extended period (i.e., 2 or more days) of heavy drinking without sobering up in the past 12 months;
- # consumption of eight or more drinks in a 24-hour period (six or more drinks for women)<sup>2</sup> at least once in the past 12 months;
- # consumption of five or more drinks in a 24-hour period (four or more drinks for women) at least once a week in the past 12 months;
- # consumption of five or more drinks in a 24-hour period on 4 or more days in the past month; or
- # for women, typical consumption of four or more drinks in a 24-hour period on 4 or more days in the past month.<sup>3</sup>

A report of any of these behaviors would indicate some considerable consumption of alcohol in the past 12 months, either on a regular or an episodic basis.

For drugs other than alcohol, people were defined as having a current "problem" pattern of use in the past 12 months if they indicated:

- # use of marijuana at least once a week,
- # use of hallucinogens at least once a week,
- # any use of cocaine (including "crack" cocaine),

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<sup>2</sup>Women who had eight or more drinks in a 24-hour period would also meet the "six or more drinks" criterion.

<sup>3</sup>The questionnaire did not ask how often respondents had four or more drinks in a 24-hour period in the past month. However, the questionnaire did ask how many drinks respondents usually had in the past month and on how many days they drank in the past month.

- # any use of heroin or other opiates, or
- # use of stimulants for nonmedical reasons<sup>4</sup> at least once a week.

Any use of cocaine or heroin in the past 12 months was considered to be a “problem” pattern because of the highly addictive potential of these drugs once a person has tried them. For the other drugs, weekly use suggests “hard-core” use that may be more likely to be associated with dependence on these drugs.

### E.3 Need for Intervention

Some substance users who have never met the criteria for a lifetime diagnosis of dependence or abuse (or who had an “ambiguous” diagnosis<sup>5</sup>) may also be in need of treatment, or they may be in need of some type of less intensive intervention, short of treatment in a formal treatment program. For example, a medical or mental health professional might counsel someone who used alcohol heavily about the potential adverse effects of continued heavy use and offer assistance in moderating or curtailing use. In addition, estimates of the size of the Maine adult household population in need of some form of intervention provide a broader picture of the population at risk for substance-related problems.

Box \*3\* in Figure E.1 consists of people who:

- # never met lifetime DSM-III-R (1987) dependence or abuse criteria for alcohol or another drug, as described above;

but who

- # nevertheless had one or more lifetime symptoms of dependence or abuse;
- # had one or more symptoms of dependence or abuse for a given drug in the past 12 months; and
- # used that particular drug in the past 12 months.

People who meet the definitions for Box \*3\* would be considered in need of some form of intervention, and some of these people could even be in need of treatment. For example, a person who was arrested for operating a motor vehicle under the influence of alcohol (OUI) in the past 12 months might not have had enough of a history of alcohol problems to “qualify” for a full diagnosis of alcohol dependence in his or her lifetime. Nevertheless, this would be an example of someone in need of at least some form of intervention to prevent his or her problems with alcohol from worsening.

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<sup>4</sup>“Nonmedical” reasons was defined as use of stimulants to get high, for curiosity, to go along with friends, or use of prescription-type stimulants without a doctor's prescription.

<sup>5</sup>Consistent with McAuliffe et al. (1995), information about substance dependence was considered to be “ambiguous” if the respondent did not meet lifetime diagnostic criteria for dependence but (a) the respondent refused to answer or answered “don't know” to some the questions needed to establish whether he or she met lifetime diagnostic criteria for dependence, and (b) the respondent would have otherwise met diagnostic criteria for dependence if he or she had answered “yes” to these questions, instead of refusing or answering “don't know.”

Box \*4\* in Figure E.1 consists of people who:

- # never met lifetime DSM-III-R (1987) dependence or abuse criteria for alcohol or another drug, as described above;
- # did not report any symptoms of dependence or abuse for a given drug in the past 12 months;

but who

- # nevertheless had one or more lifetime symptoms of dependence or abuse; and
- # reported a “problem” pattern of use, as described above.

As with Box \*3\*, people who met the definitions for Box \*4\* would be considered in need of at least some form of intervention. For example, a person who reported weekly use of marijuana in the past year might also report that he or she had one or more lifetime problems with marijuana (e.g., problems at school because of marijuana use), but that these problems occurred more than a year ago. However, a current pattern of weekly marijuana use might put this person at high risk for developing new problems.

Finally, Box \*5\* in Figure E.1 consists of people who:

- # never had any symptoms of dependence or abuse in their lifetimes,

but who

- # reported a “problem” pattern of use, as described above.

As with Boxes \*3\* and \*4\*, people meeting the definitions for Box \*5\* would be considered in need of at least some form of intervention. For example, a person might deny that drinking has ever caused problems in his or her life, but may report a pattern of heavy alcohol use that could lead to adverse health, social, or legal consequences.

## E.4 Summary of Definitions

In summary, Maine adults who met the criteria for boxes \*1\* or \*2\* in Figure E.1 were defined as being in need of *treatment*. Adults who met the criteria for boxes \*1\* through \*5\* in Figure E.1 were defined as being in need of *treatment or intervention*.

That is, any adults who met the criteria for boxes \*1\* through \*5\* can be considered at a minimum to need some form of intervention in the past 12 months because they experienced past year problems related to their substance use, or they engaged in patterns of substance use that suggest impaired functioning. Those adults who met the narrower treatment need criteria for boxes \*1\* or \*2\* were specifically in need of substance abuse treatment services.